United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Virginia Polytechnic Institute and State University

Soil Survey of Alleghany County, Virginia

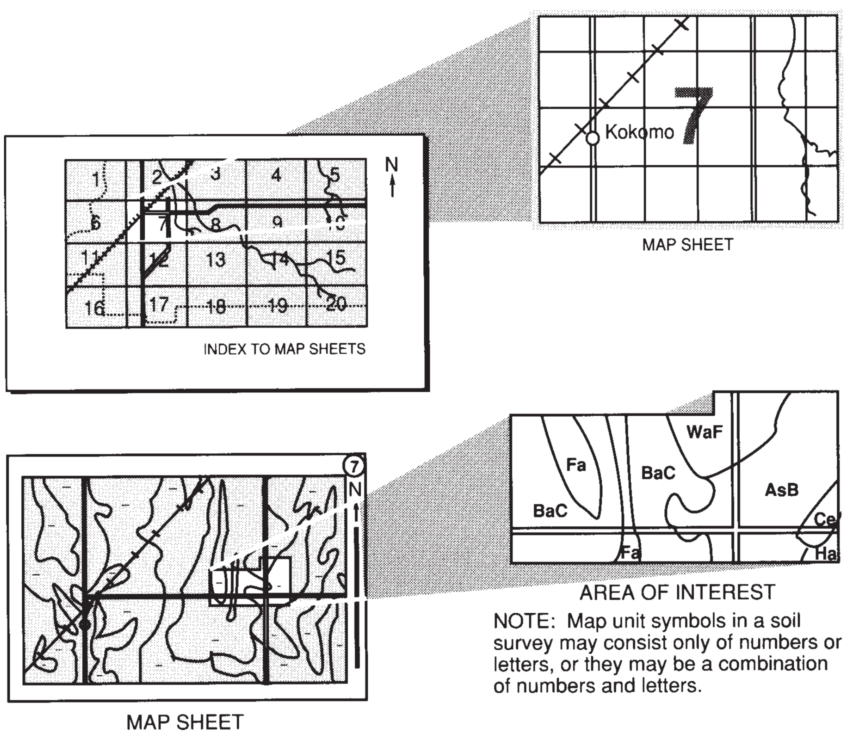
How To Use This Soil Survey

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and go to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1996. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1996. The most current official data are available at http://websoilsurvey.nrcs.usda.gov/app/. This survey was made cooperatively by the Natural Resources Conservation Service and the Virginia Polytechnic Institute and State University. It is part of the technical assistance furnished to the Mountain Soil and Water Conservation District. Financial assistance was provided by the Virginia Department of Conservation and Recreation and the Alleghany County Board of Supervisors.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: Pasture in the Rich Patch area of Alleghany County. Nicholls Knob is in the background.

Additional information about the Nation’s natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Foreword

This soil survey contains information that affects land use planning in Alleghany County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use the survey to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

M. Denise Doetzer
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Alleghany County, Virginia

By Mary Ellen M. Cook and J. Douglas Slabaugh, Natural Resources Conservation Service

Fieldwork by Thomas D. Adkins, Mary Ellen M. Cook, Mark A. Van Lear, Douglas Slabaugh, and Cynthia C. Sweeley, Natural Resources Conservation Service.

Participation in fieldwork by John Campbell, Steve Carlisle, Edward P. Ealy, Angela Elg, Donna Ferren, Joseph Kraft, David Skaer, Roy L. Vick, Jr., and Barrie L. Wolf, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
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ALLEGHANY COUNTY in the extreme west-central part of Virginia (fig. 1). The survey area encompasses all of Alleghany County and the independent cities of Covington and Clifton Forge. Alleghany County is bordered on the north by Bath County, Virginia, on the east by Rockbridge County, Virginia, on the southeast by Botetourt County, Virginia, on the south by Craig County, Virginia, on the southwest by Monroe County, West Virginia, and on the west by Greenbrier County, West Virginia. The western limit of the county is the Allegheny Front, the central ridge of the Appalachian system. The eastern boundary is the summit of North Mountain, the southeastern boundary is the summit of the Rich Patch Mountain, and the southern boundary is the summit of Potts Mountain. Elevation ranges from 1,000 feet at Iron Gate to 4,072 feet on Big Knob, at the summit of Warm Springs Mountain.

The total survey area is 290,300 acres, or 446 square miles. Nonfederal land makes up 145,173 acres, federal land makes up 144,284 acres, and census water areas make up approximately 843 acres. In 2000, according to the U.S. Census Bureau, the population of Alleghany County was 23,518 *(23)*.

General Nature of the Survey Area

This section provides general information about the Alleghany County. It discusses history and development, farming, forest resources, water resources, mineral resources, recreation, and climate.

History and Development

Alleghany County was formed in 1822 from portions of Bath, Botetourt, and Monroe Counties. It was part of the original land grant from King George III to Lord Botetourt. By the mid 1740s, permanent settlers, dominantly of Scot-Irish descent, were living

Figure 1.—Location of Alleghany County in Virginia.

along the Cowpasture River. When the Indian War of 1754 broke out, there were also recorded settlements along the Jackson River and Dunlap Creek *(10)*.

Covington, the county seat, was incorporated as a town in 1833. It became an independent city in 1952. Historically, it has been the manufacturing center of the county.

Clifton Forge is named for an early tilt-hammer forge located in the county. It was incorporated as a town in 1884 and became an independent city in 1906. Historically, it has been the transportation center of the county.

The railroad reached Clifton Forge in 1857 and Covington in 1870. The C&O Railroad built a railyard, railway shops, and the C&O Hospital in Clifton Forge. Today, as CSX Transportation, it continues to be important to the city. Clifton Forge is on the main line, which carries a significant number of freight trains on a daily basis and AMTRAK passenger trains several times a week.

By 1899, the West Virginia Pulp and Paper Company began operations in Covington. With a workforce of more than 2,000, MeadWestvaco is the largest employer in the county. The Covington woodyard processes, on average, 7,000 tons per day of hardwood and pine chips.

The mining and processing of iron ore played a major role in the early development of the county. Mining began in the county before 1800 and continued until about 1925. Furnaces were built in Longdale, Clifton Forge, Dolly Ann, Mud Tunnel, Covington, Iron Gate, Low Moor, and Jordan Mines. During the Civil War, iron produced in the survey area was used for Confederate munitions *(10)*.

Farming

In 2002, according to the Census of Agriculture, Alleghany County had a total of 202 farms that averaged 163 acres in size *(16)*. This farmland made up about 32,937 acres, or about 11 percent of the county's total land area. This acreage shows a decrease since 1997, when farmland made up 35,619 acres. Marginal uplands that are too steep to be farmed with today's equipment are being naturally reforested. In 2002, total hay was harvested on 5,400 acres. Corn for grain and wheat was harvested on small acreages.

About 10 percent of the farms in the county are operated on a full-time commercial basis. Included are two dairy farms. Total income from farm products sold amounted to only 1,987,000 dollars in 2002. The principal sources of farm income are beef cattle, corn, dairy products, wheat and small amounts of barley, soybeans, fruit, vegetables, sheep, poultry, and hogs *(16)*.

Figure 2.—The soils in Alleghany County produce a large quantity of sawtimber, which is supplied to the local sawmills.

Forest Resources

Alan D. Craft, Forestry Technician, Virginia Department of Forestry, helped prepare this section.

About 90 percent of the total land area of Alleghany County is wooded. Most of this area is commercial forestland or timberland. The United States Department of Agriculture, Forest Service, manages most of the federal land as timberland within the Jefferson and George Washington National Forests. Approximately 6,500 acres are classified as wilderness areas. Approximately 106,300 acres are privately owned. The remaining small portion of timberland is owned by the State and county.

The forestland is composed of a diversity of upland and cove Appalachian hardwoods with mixed conifer species scattered throughout.

The county depends on the forest resources for wildlife habitat, for watershed protection, and as a source of raw material for the wood industry in the survey area.

The wood products harvested each year include sawlogs, pulpwood, veneer logs, firewood, posts, and Christmas trees. The county supplies MeadWestvaco with pulpwood. It is also a major supplier of sawtimber to three sawmills and two millworks (fig. 2).

Water Resources

The county is located in the James River watershed. The Jackson and Cowpasture Rivers are tributaries of the James River. The Jackson River drains the west-central part of the county, and the Cowpasture River drains the eastern part. The two rivers join directly south of the Alleghany-Botetourt County line to form the James River. Major streams flowing into the Jackson River include Dunlap Creek, Potts Creek, Ogle Creek, and Smith Creek. Pads Creek and Simpson Creek flow into the Cowpasture River.

Figure 3.—A limestone quarry near Rich Patch that once produced crushed stone. Quarries are characterized by vertical high walls that expose bedrock and areas of rock fragments.

In 1981, the construction of the Gathright Dam on the Jackson River, approximately 19 miles north of Covington, was completed. Lake Moomaw, which was created by the project, covers 2,530 acres. One fourth of this lake lies in Alleghany County. Gathright Dam is the only flood-protection structure in the county. The reduction in flood stages is substantial. The structure, however, can only reduce flooding; it cannot eliminate flooding. Gathright Dam controls approximately 38 percent of the Jackson River watershed and has no control over the watersheds of Dunlap and Potts Creeks *(1)*.

The Alleghany County Department of Public Works currently obtains water from both surface and ground-water sources. Covington has a filtration plant on the James River. Clifton Forge has a reservoir and filtration plant on Smith Creek. The county's primary ground-water source is the Pounding Mill spring which is potentially under the influence of surface water *(4)*. Most outlying rural residents rely on individual ground-water wells for their water supply. Water from wells in the limestone and shale valleys varies greatly in yield and quality. Calcium is added to the water by limestone strata. The water also has a high sulfur content due to the pyritic and carbonaceous shale strata.

Mineral Resources

The Virginia Division of Mineral Resources prepared this section.

Limestone and dolomite from various localities in Alleghany County have been used for roadstone, concrete aggregate, agstone, furnace flux, riprap, and building stone. In 1971, Vulcan Materials Company, Mideast Division, operated a quarry in limestone near Rich Patch that produced crushed stone, primarily for use in the construction of Highway I-64 (fig. 3). The Liberty Limestone Corporation maintained a quarry in dolomite near Callaghan. This quarry produced crushed stone for roadstone and other uses.

Travertine was produced near Falling Spring and marketed for agricultural purposes.

Sandstone has been quarried near Callaghan and crushed for use in construction, paving, and engine-sand purposes. Shale has been quarried for road material. Clay was obtained at Covington for use in brick.

Iron deposits have played an important role in the county's past. A total of approximately 13 million tons of iron ore have reportedly been produced by surface and underground mining in the Clifton Forge iron district in Alleghany, Bath, and Botetourt Counties. Large tonnages of Oriskany ore and smaller quantities of Clinton ore were mined. Manganese minerals occur in a few areas in Alleghany County and have been mined on a small scale. Phosphate-bearing rock occurs near Clifton Forge, but commercial deposits have not been established *(24)*.

Recreation

Alleghany County has numerous areas that are used for camping, hiking, rock climbing, hunting, fishing, golfing, boating, mountain biking, and sightseeing. Lands available for recreation include the George Washington and Jefferson National Forests and several State and privately owned areas.

Areas managed as national forest include Gathright Dam and Lake Moomaw Recreation Area, Coles Mountain Recreation Area, Longdale Recreation Area, Morris Hill campground, and the Rich Hole Wilderness. The T.M. Gathright Wildlife Management Area is devoted to the management of wildlife species and habitat with an emphasis on wild turkey.

Douthat State Park has a 50-acre lake and facilities for camping, hiking, swimming, and picnicking. In addition, private campgrounds are located throughout the county.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Covington, Virginia, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 36.0 degrees F and the average daily minimum temperature is 24.6 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -19 degrees. In summer, the average temperature is 72.5 degrees and the average daily maximum temperature is 85.8 degrees. The highest recorded temperature, which occurred on August 17, 1988, is 102 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 36 inches. Of this, 16.9 inches, or about 47 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 8.00 inches, recorded on November 4, 1985. Thunderstorms occur on about 36 days each year, and most occur between May and August.

The average seasonal snowfall is 13.6 inches. The greatest snow depth at any one time during the period of record was 22 inches, recorded on January 30, 1966. On the average, 9 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 52 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 62 percent of the time possible in summer and 52 percent in winter. The prevailing wind is from the west. Average windspeed is highest, 9 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over

long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Detailed Soil Map Units

The map units delineated on the detailed soil maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown

Figure 4.—An area of Alonzville loam, 0 to 3 percent slopes, rarely flooded, near Dabney Lancaster Community College. Loblolly pine has been planted in the middleground. The hillsides in the background are in an area of Weikert-Rock outcrop-Rough complex.

on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Caneyville silt loam, 35 to 55 percent slopes, very rocky, is a phase of the Caneyville series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Berks-Weikert complex, 8 to 15 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Landfills is an example.

Table 4 lists the map units in this survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

1A—Alonzville loam, 0 to 3 percent slopes, rarely flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low stream terraces in a river valley (fig. 4)
Position on the landform: Treads and risers

Map Unit Composition

Alonzville and similar soils: Typically 80 percent, ranging from about 65 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown loam

Subsoil:
5 to 15 inches—brown loam
15 to 55 inches—dark yellowish brown clay loam
55 to 65 inches—dark yellowish brown gravelly loam

Minor Components

Dissimilar components:
- Gladehill and Wolfgap soils, which have a dark colored surface layer more than 10 inches thick; on floodplains
- Coursey soils, which are moderately well drained; on adjacent stream terraces
- Oriskany soils, which have more than 35 percent rock fragments throughout and are not susceptible to flooding; on footslopes
- Ogles soils, which have more than 35 percent rock fragments throughout; on floodplains
- Soils that flood frequently or do not flood; in similar landforms

Similar components:
- Shelocta soils, which are not susceptible to flooding; on footslopes
- Soils that are redder than the Alonzville soil; on similar landforms
- Soils that have less clay than the Alonzville soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the subsoil; on similar landforms
- Soils that have more than 35 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that are well drained and have iron depletions at depths between 30 and 60 inches; on similar landforms
- Soils that flood occasionally; on lower terraces
- Soils that are on slopes that range from 3 to 5 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is well suited to cropland.

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and eastern white pine
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: L
Hydric soil: No

2A—Alonzville loam, 0 to 3 percent slopes, protected

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low stream terraces in a river valley
Position on the landform: Treads and risers
Note: This soil occurs on landform positions that are subject to flooding under natural conditions but that are currently protected from flooding due to a water-control structure located upstream

Map Unit Composition

Alonzville and similar soils: Typically 80 percent, ranging from about 65 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown loam

Subsoil:
5 to 15 inches—brown loam
15 to 55 inches—dark yellowish brown clay loam
55 to 65 inches—dark yellowish brown gravelly loam

Minor Components

Dissimilar components:
- Gladehill and Wolfgap soils, which have a dark colored surface layer that is more than 10 inches thick; on floodplains
- Coursey soils, which are moderately well drained; on stream terraces
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes

- Ogles soils, which have more than 35 percent rock fragments throughout; on floodplains
- Soils that flood rarely; on similar landforms

Similar components:
- Soils that have less clay in the subsoil than the Alonzville soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the subsoil; on similar landforms
- Soils that have more than 35 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that are on slopes that range from 3 to 5 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is well suited to cropland.

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and eastern white pine
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: L
Hydric soil: No

3C—Alticrest-Dekalb complex, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Alticrest and Dekalb soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Alticrest and similar soils: Typically 50 percent, ranging from about 35 to 65 percent
Dekalb and similar soils: Typically 30 percent, ranging from about 15 to 45 percent

Typical Profile

Alticrest

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsurface layer:
2 to 4 inches—dark yellowish brown channery sandy loam

Subsoil:
4 to 12 inches—dark yellowish brown channery sandy loam
12 to 26 inches—yellowish brown channery sandy loam
26 to 30 inches—strong brown channery sandy loam; red mottles

Hard bedrock:
30 inches—sandstone bedrock

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to bedrock and have more clay in the subsoil than the Alticrest and Dekalb soils; on similar landforms
- Berks, Weikert, and Gilpin soils, which are over shale bedrock and have a siltier subsoil than the Alticrest and Dekalb soils; on similar landforms
- Oriskany soils, which are very deep to bedrock; on footslopes
- Soils that are very shallow to sandstone or shale bedrock; in similar landforms

- Soils that are extremely stony or rubbly; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Lehew soils, which have a redder subsoil than the Alticrest and Dekalb soils; on similar landforms
- Lily soils, which have more clay in the subsoil than the Alticrest and Dekalb soils; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have nonstony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Alticrest—very low (about 2.7 inches); Dekalb—very low (about 1.9 inches)
Slowest saturated hydraulic conductivity: Alticrest—high (about 2.0 in/hr); Dekalb—high (about 6.0 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Alticrest—well drained; Dekalb—excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: FF
Hydric soils: No

4D—Berks channery silt loam, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Berks and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta and Murrill soils, which are very deep to bedrock and have fewer rock fragments than the Berks soil; on footslopes
- Oriskany soils, which are very deep to bedrock; on footslopes
- Faywood and Poplimento soils, which are moderately deep and very deep to bedrock, respectively, and have more clay and fewer rock fragments than the Berks soil; on similar landforms
- Rough soils, which are very shallow to bedrock; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Berks soil; on similar landforms
- Dekalb and Lehew soils, which occur over hard sandstone bedrock and have sandier textures in the subsoil than the Berks soil; on similar landforms
- Weikert soils, which are shallow to bedrock; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms

- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: JJ
Hydric soil: No

4E—Berks channery silt loam, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Berks and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta and Murrill soils, which are very deep to bedrock and have fewer rock fragments than the Berks soil; on footslopes
- Oriskany soils, which are very deep to bedrock; on footslopes
- Faywood and Poplimento soils, which are moderately deep and very deep to bedrock, respectively, and have more clay and fewer rock fragments than the Berks soil; on similar landforms
- Rough soils, which are very shallow to bedrock; on similar landforms
- Weikert soils, which are shallow to bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, wich have fewer rock fragments in the subsoil than the Berks soil; on similar landforms
- Dekalb and Lehew soils, which occur over hard sandstone bedrock and have sandier textures in the subsoil than the Berks soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

5C—Berks-Weikert complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Berks and Weikert soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Berks and similar soils: Typically 55 percent, ranging from about 40 to 65 percent
Weikert and similar soils: Typically 30 percent, ranging from about 20 to 45 percent

Typical Profile

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments than the Berks and Weikert soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock and have many stones on the surface; on footslopes
- Blairton and Wharton soils, which are moderately well drained; on similar landforms
- Rough soils, which are very shallow to bedrock; on similar landforms
- Soils that are very deep to shale bedrock; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Berks and Weikert soils; on similar landforms

- Soils that have redder subsoils than the Berks and Weikert soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.7 inches); Weikert—very low (about 1.6 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.6 in/hr); Weikert—high (about 2.0 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak and eastern white pine
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Berks—3e; Weikert—4s
Virginia soil management group: JJ
Hydric soils: No

6F—Berks-Weikert complex, 55 to 80 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Berks and Weikert soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Berks and similar soils: Typically 80 percent, ranging from about 65 to 95 percent
Weikert and similar soils: Typically 15 percent, ranging from about 10 to 30 percent

Typical Profile

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta and Murrill soils, which are very deep to bedrock and have fewer rock fragments than the Berks and Weikert soils; on footslopes
- Oriskany soils, which are very deep to bedrock; on footslopes
- Faywood and Caneyville soils, which are moderately deep to bedrock and have more clay than the Berks and Weikert soils; on similar landforms
- Poplimento soils, which are very deep to bedrock and have more clay than the Berks and Weikert soils; on similar landforms
- Rough soils, which are very shallow to bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Berks and Weikert soils; on similar landforms
- Dekalb and Lehew soils, which occur over hard sandstone bedrock and have sandier textures in the subsoil than the Berks and Weikert soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.7 inches); Weikert—very low (about 1.6 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.6 in/hr); Weikert—high (about 2.0 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

7D—Berks-Weikert complex, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Berks and Weikert soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Berks and similar soils: Typically 70 percent, ranging from about 60 to 80 percent
Weikert and similar soils: Typically 25 percent, ranging from about 15 to 35 percent

Typical Profile

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam

11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments than the Berks and Weikert soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock; on footslopes
- Soils that are very deep to shale bedrock; on similar landforms
- Rough soils, which are very shallow to bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Berks and Weikert soils; on similar landforms
- Dekalb and Lehew soils, which occur over hard sandstone bedrock and have sandier textures in the subsoil than the Berks and Weikert soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.7 inches); Weikert—very low (about 1.6 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.6 in/hr); Weikert—high (about 2.0 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak; poorly suited to eastern white pine

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: JJ
Hydric soils: No

7E—Berks-Weikert complex, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Berks and Weikert soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Berks and similar soils: Typically 55 percent, ranging from about 45 to 65 percent
Weikert and similar soils: Typically 40 percent, ranging from about 30 to 50 percent

Typical Profile

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments than the Berks and Weikert soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock and have many stones on the surface; on footslopes
- Rough soils, which are very shallow to bedrock; on similar landforms
- Soils that are very deep to shale bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Berks and Weikert soils; on similar landforms
- Dekalb and Lehew soils, which occur over hard sandstone bedrock and have sandier textures in the subsoil than the Berks and Weikert soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.7 inches); Weikert—very low (about 1.6 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.6 in/hr); Weikert—high (about 2.0 in/hr)

Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

8E—Caneyville silt loam, 35 to 55 percent slopes, very rocky

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically backslopes; summits and shoulders in some areas
Note: About 2 to 10 percent of the surface is covered with outcrops of limestone bedrock

Map Unit Composition

Caneyville and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsurface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Minor Components

Dissimilar components:
- Frederick soils, which are very deep to limestone bedrock; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville soil; on footslopes
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments and less clay than the Caneyville soil; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas that have more than 10 percent rock outcrops; on similar landforms
- Areas that contain sinkholes; on similar landforms

Similar components:
- Faywood soils, which have a yellower subsoil than the Caneyville soil; on similar landforms
- Soils that are shallow or deep to limestone bedrock; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the subsoil; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 80 percent; on similar landforms
- Areas that have less than 2 percent rock outcrops; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of the rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e

Virginia soil management group: Y
Hydric soil: No

8F—Caneyville silt loam, 55 to 80 percent slopes, very rocky

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically backslopes; summits and shoulders in some areas
Note: About 2 to 10 percent of the surface is covered with outcrops of limestone bedrock

Map Unit Composition

Caneyville and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsurface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Minor Components

Dissimilar components:
- Frederick soils, which are very deep to limestone bedrock; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville soil; on footslopes
- Oriskany soils, which are very deep to bedrock, have more than 35 percent rock fragments, and have less clay than the Caneyville soil; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas that have more than 10 percent rock outcrops; on similar landforms

Similar components:
- Faywood soils, which have a yellower subsoil than the Caneyville soil; on similar landforms
- Soils that are shallow or deep to limestone bedrock; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the subsoil; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms
- Areas that have less than 2 percent rock outcrops; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of the rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e

Virginia soil management group: Y
Hydric soil: No

9D—Caneyville silt loam, karst, 15 to 35 percent slopes, very rocky

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills in areas with karst topography
Position on the landform: Summits, shoulders, and backslopes
Note: About 2 to 10 percent of the surface is covered with outcrops of limestone bedrock

Map Unit Composition

Caneyville and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsurface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Minor Components

Dissimilar components:
- Frederick soils, which are very deep to limestone bedrock; on similar landforms
- Watahala soils, which are very deep to bedrock and have more chert gravel in the soil than the Caneyville soil; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville soil; on footslopes
- Oriskany soils, which are very deep to bedrock, have more than 35 percent rock fragments, and have less clay than the Caneyville soil; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas that have more than 10 percent rock outcrops; on similar landforms

Similar components:
- Faywood soils, which have a yellower subsoil than the Caneyville soil; on similar landforms
- Soils that are shallow or deep to limestone bedrock; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the subsoil; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms
- Areas that have less than 2 percent rock outcrops; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)

Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.
- Because of the karst (sinkhole) areas, the potential for ground-water contamination is increased.
- Rock outcrops may limit machinery operations.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Because of the sinkholes (karst areas), the potential for ground-water contamination from conventional septic systems is increased; septic systems should not be located near sinkholes.
- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.
- Because of the rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Y
Hydric soil: No

10C—Caneyville-Frederick complex, karst, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills in areas with karst topography
Position on the landform: Typically summits and shoulders; backslopes in some areas
Note: Many sinkholes are scattered throughout areas of this map unit

Map Unit Composition

Note: These Caneyville and Frederick soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Caneyville and similar soils: Typically 45 percent, ranging from about 30 to 55 percent
Frederick and similar soils: Typically 45 percent, ranging from about 30 to 55 percent

Typical Profile

Caneyville

Surface layer:
0 to 4 inches—brown silt loam

Suburface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Frederick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay; strong brown mottles
46 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock, have stones on the soil surface, and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and are yellower than the Caneyville and Frederick soils; on similar landforms
- Watahala soils, which are very deep to bedrock and have more chert gravel in the soil than the Caneyville and Frederick soils; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville and Frederick soils; on footslopes
- Soils that are shallow or deep to limestone or chert bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Caneyville—low (about 4.6 inches); Frederick—moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Caneyville—moderately low (about 0.06 in/hr); Frederick—moderately high (about 0.6 in/hr)
Depth class: Caneyville—moderately deep (20 to 40 inches); Frederick—very deep (more than 60 inches)
Depth to root-restrictive feature: Caneyville—20 to 40 inches to bedrock (lithic); Frederick—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Caneyville—high; Frederick—medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; not suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- Because of the karst (sinkhole) areas, the potential for ground-water contamination is increased.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.
- Because of the karst (sinkhole) areas, the potential for ground-water contamination is increased.

Woodland

Suitability: Moderately suited to northern red oak
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Because of the sinkholes (karst areas), the potential for ground-water contamination from conventional septic systems is increased; septic systems should not be located near sinkholes.
- Because of the limited depth to bedrock, the Caneyville soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Caneyville—Y; Frederick—M
Hydric soils: No

10D—Caneyville-Frederick complex, karst, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills in areas with karst topography
Position on the landform: Summits, shoulders, and backslopes
Note: Many sinkholes are scattered throughout areas of this map unit

Map Unit Composition

Note: These Caneyville and Frederick soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Caneyville and similar soils: Typically 45 percent, ranging from about 30 to 55 percent
Frederick and similar soils: Typically 45 percent, ranging from about 30 to 55 percent

Typical Profile

Caneyville

Surface layer:
0 to 4 inches—brown silt loam

Suburface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Frederick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay; strong brown mottles
46 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock, have stones on the soil surface, and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and are yellower than the Caneyville and Frederick soils; on similar landforms
- Watahala soils, which are very deep to bedrock and have more chert gravel in the soil than the Caneyville and Frederick soils; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville and Frederick soils; on footslopes
- Soils that are shallow or deep to limestone or chert bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Caneyville—low (about 4.6 inches); Frederick—moderate (about 8.7 inches)

Slowest saturated hydraulic conductivity: Caneyville—moderately low (about 0.06 in/hr); Frederick—moderately high (about 0.6 in/hr)
Depth class: Caneyville—moderately deep (20 to 40 inches); Frederick—very deep (more than 60 inches)
Depth to root-restrictive feature: Caneyville—20 to 40 inches to bedrock (lithic); Frederick—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Caneyville—very high; Frederick—high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.
- Because of the karst (sinkhole) areas, the potential for ground-water contamination is increased.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Because of the sinkholes (karst areas), the potential for ground-water contamination from conventional septic systems is increased; septic systems should not be located near sinkholes.
- Because of the limited depth to bedrock, the Caneyville soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Caneyville—Y; Frederick—M
Hydric soils: No

10E—Caneyville-Frederick complex, karst, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills in areas with karst topography
Position on the landform: Typically backslopes; summits and shoulders in some areas
Note: Many sinkholes are scattered throughout areas of this map unit

Map Unit Composition

Note: These Caneyville and Frederick soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Caneyville and similar soils: Typically 60 percent, ranging from about 45 to 75 percent
Frederick and similar soils: Typically 35 percent, ranging from about 20 to 50 percent

Typical Profile

Caneyville

Surface layer:
0 to 4 inches—brown silt loam

Suburface layer:
4 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 16 inches—strong brown silty clay; yellowish brown mottles
16 to 22 inches—yellowish red clay; dark brown iron-manganese masses
22 to 29 inches—yellowish red clay; yellowish brown mottles

Hard bedrock:
29 inches—limestone bedrock

Frederick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam

8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay; strong brown mottles
46 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock, have stones on the surface, and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and are yellower than the Caneyville and Frederick soils; on similar landforms
- Watahala soils, which are very deep to bedrock and have more chert gravel in the soil than the Caneyville and Frederick soils; on similar landforms
- Murrill soils, which are very deep to bedrock and have less clay than the Caneyville and Frederick soils; on footslopes
- Soils that are shallow or deep to limestone or chert bedrock; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Caneyville—low (about 4.6 inches); Frederick—moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Caneyville—moderately low (about 0.06 in/hr); Frederick—moderately high (about 0.6 in/hr)
Depth class: Caneyville—moderately deep (20 to 40 inches); Frederick—very deep (more than 60 inches)
Depth to root-restrictive feature: Caneyville—20 to 40 inches to bedrock (lithic); Frederick—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Caneyville—very high; Frederick—high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.

- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Because of the sinkholes (karst areas), the potential for ground-water contamination from conventional septic systems is increased; septic systems should not be located near sinkholes.
- Because of the limited depth to bedrock, the Caneyville soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Caneyville—Y; Frederick—M
Hydric soils: No

11B—Cottonbend silt loam, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Cottonbend and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 17 inches—yellowish brown fine sandy loam
17 to 32 inches—brown loam
32 to 52 inches—strong brown loam
52 to 72 inches—strong brown gravelly loam

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout and have many stones on the surface; on footslopes
- Escatawba soils, which have a perched seasonal high water table; on footslopes
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Nicelytown and Zoar soils, which are moderately well drained; on similar landforms
- Purdy soils, which are poorly drained and have a seasonal high water table at or above the surface; on similar landforms and in backswamps

Similar components:
- Sugarhol soils, which have more than clay in the subsoil than the Cottonbend soil; on similar landforms
- Alonzville soils, which flood rarely; on lower level terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 40 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to eastern white pine
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: L
Hydric soil: No

11C—Cottonbend silt loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Cottonbend and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 17 inches—yellowish brown fine sandy loam
17 to 32 inches—brown loam
32 to 52 inches—strong brown loam
52 to 72 inches—strong brown gravelly loam

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained and have a seasonal high water table at or above the surface; on similar landforms and in backswamps
- Oriskany soils, which have more than 35 percent rock fragments throughout and have stones on the surface; on footslopes
- Escatawba soils, which have a perched seasonal high water table; on footslopes
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Nicelytown and Zoar soils, which are moderately well drained; on similar landforms

Similar components:
- Sugarhol soils, which have more than clay in the subsoil than the Cottonbend soil; on similar landforms
- Alonzville soils, which flood rarely; on lower terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 40 percent rock fragments in the lower part of the subsoil; on similar landforms

- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to eastern white pine
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: L
Hydric soil: No

12B—Cottonbend-Urban land complex, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley and on hills
Position on the landform: Treads, footslopes, and toeslopes

Map Unit Composition

Note: The Cottonbend soil and Urban land occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Cottonbend and similar soils: Typically 50 percent, ranging from about 35 to 65 percent
Urban land: Typically 35 percent, ranging from about 20 to 50 percent

Typical Profile

Cottonbend

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 17 inches—yellowish brown fine sandy loam
17 to 32 inches—brown loam
32 to 52 inches—strong brown loam
52 to 72 inches—strong brown gravelly loam

Urban land

This part of the map unit consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings, and other impervious surfaces.

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained and have a seasonal high water table at or above the surface; on similar landforms and in backswamps
- Oriskany soils, which have more than 35 percent rock fragments throughout and stones on the soil surface; on footslopes
- Escatawba soils, which have a perched seasonal high water table; on footslopes
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Nicelytown and Zoar soils, which are are moderately well drained; on similar landforms

Similar components:
- Sugarhol soils, which have more than clay in the subsoil than the Cottonbend soil; on similar landforms
- Alonzville soils, which flood rarely; on lower terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 40 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that are covered with fill material; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Properties and Qualities of the Cottonbend Soil

Available water capacity: High (about 9.4 inches)

Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- The Cottonbend soil is well suited to pastureland.

Building sites

- The Cottonbend soil is well suited to building sites.

Septic tank absorption fields

- The Cottonbend soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cottonbend—2e; Urban land—none assigned
Virginia soil management group: Cottonbend—L; Urban land—none assigned
Hydric soils: No

12C—Cottonbend-Urban land complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley and on hills
Position on the landform: Treads, footslopes, and toeslopes

Map Unit Composition

Note: The Cottonbend soil and Urban land occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Cottonbend and similar soils: Typically 50 percent, ranging from about 35 to 65 percent
Urban land: Typically 35 percent, ranging from about 20 to 50 percent

Typical Profile

Cottonbend

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 17 inches—yellowish brown fine sandy loam
17 to 32 inches—brown loam
32 to 52 inches—strong brown loam
52 to 72 inches—strong brown gravelly loam

Urban land

This part of the map unit consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings, and other impervious surfaces.

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained and have a seasonal high water table at or above the surface; on similar landforms and in backswamps
- Oriskany soils, which have more than 35 percent rock fragments throughout and stones on the soil surface; on footslopes
- Escatawba soils, which have a perched seasonal high water table; on footslopes
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Nicelytown and Zoar soils, which are are moderately well drained; on similar landforms

Similar components:
- Sugarhol soils, which have more than clay in the subsoil than the Cottonbend soil; on similar landforms
- Alonzville soils, which flood rarely; on lower terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 40 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that are covered with fill material; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Properties and Qualities of the Cottonbend Soil

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- The Cottonbend soil is well suited to pastureland.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cottonbend—3e; Urban land—none assigned
Virginia soil management group: Cottonbend—L; Urban land—none assigned
Hydric soils: No

13A—Coursey silt loam, 0 to 3 percent slopes, rarely flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Coursey and similar soils: Typically 80 percent, ranging from about 65 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—brown loam; dark yellowish brown masses of oxidized iron
12 to 20 inches—brown loam; dark yellowish brown and yellowish brown masses of oxidized iron
20 to 25 inches—brown loam; brown iron depletions and dark yellowish brown and yellowish brown masses of oxidized iron
25 to 50 inches—brown loam; grayish brown iron depletions and yellowish brown and dark yellowish brown masses of oxidized iron
50 to 60 inches—grayish brown loam; yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Alonzville soils, which are well drained; on similar landforms
- Gladehill and Wolfgap soils, which are well drained, have a dark colored surface layer more than 10 inches thick, and are more susceptible to flooding than the Coursey soil; on floodplains
- Ogles soils, which are well drained, have more than 35 percent rock fragments

throughout, and are more susceptible to flooding than the Coursey soil; on floodplains
- Purdy and other poorly drained soils, which have more than 35 percent clay throughout; on similar landforms
- Soils that flood frequently or that do not flood; in similar landforms

Similar components:
- Soils that are deep to shale bedrock; on hills
- Soils that have less clay than the Coursey soil; on similar landforms
- Soils that are well drained and have iron depletions between depths of 36 and 60 inches; on similar landforms
- Soils that are somewhat poorly drained; on similar landforms
- Soils that flood occasionally; on similar landforms
- Soils that are on slopes that range from 3 to 5 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 11.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 24 to 36 inches
Water table kind: Apparent
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to eastern white pine; moderately suited to northern red oak
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: G
Hydric soil: No

14B—Coursey-Ogles-Shelocta complex

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces, floodplains, and areas at the base of slopes in river valleys
Position on the landform: Coursey—treads and risers; Ogles—floodplain steps; Shelocta—footslopes
Slope range: Coursey—0 to 8 percent; Ogles—0 to 3 percent; Shelocta—3 to 15 percent

Map Unit Composition

Note: These Coursey, Ogles, and Shelocata soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Coursey and similar soils: Typically 30 percent, ranging from about 15 to 40 percent
Ogles and similar soils: Typically 30 percent, ranging from about 15 to 40 percent
Shelocta and similar soils: Typically 30 percent, ranging from about 15 to 40 percent

Typical Profile

Coursey

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—brown loam; dark yellowish brown masses of oxidized iron
12 to 20 inches—brown loam; dark yellowish brown and yellowish brown masses of oxidized iron
20 to 25 inches—brown loam; brown iron depletions and dark yellowish brown and yellowish brown masses of oxidized iron
25 to 50 inches—brown loam; grayish brown iron depletions and yellowish brown and dark yellowish brown masses of oxidized iron
50 to 60 inches—grayish brown loam; yellowish brown masses of oxidized iron

Ogles

Surface layer:
0 to 5 inches—very dark grayish brown very cobbly loam

Subsoil:
5 to 28 inches—yellowish brown extremely cobbly sandy loam

Substratum:
28 to 47 inches—yellowish brown extremely cobbly sandy loam
47 to 60 inches—yellowish brown very cobbly sandy loam

Shelocta

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 18 inches—brown channery silt loam
18 to 38 inches—strong brown channery silt loam
38 to 60 inches—brown channery silt loam
60 to 65 inches—brown channery silt loam; pale brown and light brownish gray iron depletions

Minor Components

Dissimilar components:
- Macove soils, which have more than 35 percent rock fragments throughout and formed in colluvium; on footslopes
- Alonzville soils, which are well drained; on stream terraces
- Gladehill and Wolfgap soils, which have a dark colored surface layer that is more than 10 inches thick; on floodplains
- Soils that are poorly drained; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms

Similar components:
- Soils that have more sand than the Coursey, Ogles, and Shelocta soils; on footslopes
- Soils that are deep to shale bedrock; on footslopes
- Soils that have very stony surfaces; on similar landforms
- Soils that flood frequently; on similar landforms
- Soils that are on less steep or more steep slopes; on similar landforms

Soil Properties and Qualities

Available water capacity: Coursey—high (about 11.5 inches); Ogles—very low (about 2.9 inches); Shelocta—high (about 9.0 inches)
Slowest saturated hydraulic conductivity: Coursey and Shelocta—moderately high (about 0.6 in/hr); Ogles—high (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Coursey—moderately well drained; Ogles and Shelocta—well drained
Depth to seasonal water saturation: Coursey—about 24 to 36 inches; Ogles—about 42 to 72 inches; Shelocta—more than 6 feet
Water table kind: Coursey and Ogles—apparent; Shelocta—not applicable
Flooding hazard: Coursey—rare; Ogles—occasional; Shelocta—none
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Coursey and Shelocta—medium; Ogles—very low
Surface fragments: None
Parent material: Coursey and Ogles—alluvium derived from sandstone and shale; Shelocta—colluvium derived from shale, siltstone, and some fine-grained sandstone

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Flooding may damage pastures.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to eastern white pine; moderately suited to northern red oak
- Flooding may damage haul roads.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Flooding restricts the safe use of roads by log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- Because of the flooding, these soils are unsuited to building site development.

Septic tank absorption fields

- Because of the flooding, these soils are unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Coursey—2w; Ogles—4s; Shelocta—2e
Virginia soil management group: Coursey—G; Ogles—CC; Shelocta—L
Hydric soils: No

15F—Dekalb channery sandy loam, 55 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Dekalb and similar soils: Typically 60 percent, ranging from about 50 to 75 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to bedrock and have more clay in the subsoil than the Dekalb soil; on similar landforms
- Berks, Weikert, and Gilpin soils, which occur over shale bedrock and have a siltier subsoil than the Dekalb soil; on similar landforms
- Oriskany soils, which are very deep to bedrock; on footslopes
- Lily soils, which have more clay and fewer rock fragments in the subsoil than the Dekalb soil; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Alticrest soils, which have fewer rock fragments than the Dekalb soil; on similar landforms
- Lehew soils, which have a redder subsoil than the Dekalb soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have a very stony or rubbly surface; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Very low (about 1.9 inches)
Slowest saturated hydraulic conductivity: High (about 6.0 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None

Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.0 to 15.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to eastern white pine
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The volume of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: FF
Hydric soil: No

16D—Dekalb-Alticrest complex, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Dekalb and Alticrest soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 60 percent, ranging from about 50 to 75 percent
Alticrest and similar soils: Typically 25 percent, ranging from about 15 to 40 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Alticrest

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsurface layer:
2 to 4 inches—dark yellowish brown channery sandy loam

Subsoil:
4 to 12 inches—dark yellowish brown channery sandy loam
12 to 26 inches—yellowish brown channery sandy loam
26 to 30 inches—strong brown channery sandy loam; red mottles

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to bedrock and have more clay in the subsoil than Dekalb soil; on similar landforms
- Berks, Weikert, and Gilpin soils, which occur over shale bedrock and have a siltier subsoil than the Dekalb soil; on similar landforms
- Oriskany soils, which are very deep to bedrock; on footslopes
- Soils that are very shallow to sandstone bedrock; on similar landforms

- Soils that have an extremely stony or rubbly surface; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Lehew soils, which have a redder subsoil than the Dekalb soil; on similar landforms
- Lily soils, which have more clay in the subsoil than the Dekalb soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have a nonstony surface; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Dekalb—very low (about 1.9 inches); Alticrest—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Dekalb—high (about 6.0 in/hr); Alticrest—high (about 2.0 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Dekalb—excessively drained; Alticrest—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak and eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: FF
Hydric soils: No

16E—Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Dekalb and Alticrest soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 60 percent, ranging from about 50 to 75 percent
Alticrest and similar soils: Typically 25 percent, ranging from about 15 to 40 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Alticrest

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsurface layer:
2 to 4 inches—dark yellowish brown channery sandy loam

Subsoil:
4 to 12 inches—dark yellowish brown channery sandy loam
12 to 26 inches—yellowish brown channery sandy loam
26 to 30 inches—strong brown channery sandy loam; red mottles

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Berks, Weikert, and Gilpin soils, which occur over shale bedrock and have a siltier subsoil than the Dekalb soil; on similar landforms
- Oriskany soils, which are very deep to bedrock; on footslopes
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Soils that have an extremely stony or rubbly surface; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Lehew soils, which have a redder subsoil than the Dekalb soil; on similar landforms
- Lily soils, which have more clay in the subsoil than the Dekalb soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have nonstony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Dekalb—very low (about 1.9 inches); Alticrest—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Dekalb—high (about 6.0 in/hr); Alticrest—high (about 2.0 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Dekalb—excessively drained; Alticrest—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland
- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak and eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.

- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: FF
Hydric soils: No

17D—Dekalb-Lily-McClung complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Dekalb, Lily, and McClung soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 40 percent, ranging from about 35 to 50 percent
Lily and similar soils: Typically 30 percent, ranging from about 25 to 40 percent
McClung and similar soils: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 18 inches—yellowish brown very channery sandy loam
18 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Lily

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—black sandy loam

Subsoil:
3 to 17 inches—yellowish brown loam
17 to 27 inches—yellowish brown clay loam
27 to 32 inches—strong brown gravelly clay loam

Hard bedrock:
32 inches—sandstone bedrock

McClung

Organic layer:
0 to 2 inches—moderately decomposed plant material

Subsurface layer:
2 to 3 inches—light gray sandy loam

Subsoil:
3 to 19 inches—yellowish brown sandy loam
19 to 28 inches—strong brown sandy clay loam
28 to 38 inches—strong brown sandy clay loam; red mottles
38 to 51 inches—yellowish red sandy clay loam; red and brownish yellow mottles
51 to 65 inches—reddish yellow sandy clay loam; yellow mottles

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on similar landforms
- Berks, Weikert, and Rough soils, which are moderately deep, shallow, and very shallow to shale bedrock, respectively; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that contain sinkholes; on similar landforms

Similar components:
- Alticrest soils, which are moderately deep to sandstone bedrock; on similar landforms
- Soils that have less sand and more silt in the subsoil than the Dekalb, Lily, and McClung soils; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Dekalb—very low (about 1.9 inches); Lily—low (about 4.0 inches); McClung—moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Dekalb—high (about 6.0 in/hr); Lily and McClung—moderately high (about 0.6 in/hr)
Depth class: Dekalb and Lily—moderately deep (20 to 40 inches); McClung—very deep (more than 60 inches)
Depth to root-restrictive feature: Dekalb and Lily—20 to 40 inches to bedrock (lithic); McClung—more than 60 inches
Drainage class: Dekalb—excessively drained; Lily and McClung—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Dekalb and Lily—very high; McClung—high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Dekalb and Lily—residuum weathered from sandstone; McClung—residuum weathered from sandstone with interbeds of limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak, chestnut oak, and eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Figure 5.—An area of Dekalb-Lily complex, 35 to 55 percent slopes, very stony. Steep slopes and surface stoniness limit the use of equipment in areas of this map unit.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Dekalb and Lily—7s; McClung—6e
Virginia soil management group: Dekalb—FF; Lily—U; McClung—M
Hydric soils: No

18E—Dekalb-Lily complex, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains (fig. 5)
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Dekalb and Lily soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 65 percent, ranging from about 55 to 70 percent
Lily and similar soils: Typically 20 percent, ranging from about 15 to 25 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 18 inches—yellowish brown very channery sandy loam
18 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Lily

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—black sandy loam

Subsoil:
3 to 17 inches—yellowish brown loam
17 to 27 inches—yellowish brown clay loam
27 to 32 inches—strong brown gravelly clay loam

Hard bedrock:
32 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to bedrock and have fewer rock fragments in the soil than the Dekalb soil; on similar landforms
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Berks, Weikert, and Rough soils, which are moderately deep, shallow, and very shallow to shale bedrock, respectively; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas with sinkholes; on similar landforms

Similar components:
- Alticrest soils, which are moderately deep to sandstone bedrock; on similar landforms
- Soils that have less sand and more silt in the subsoil than the Dekalb and Lily soils; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Dekalb—very low (about 1.9 inches); Lily—low (about 4.0 inches)
Slowest saturated hydraulic conductivity: Dekalb—high (about 6.0 in/hr); Lily—moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Dekalb—excessively drained; Lily—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.

Figure 6.—An area of Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony. The Rock outcrop is Tuscarora sandstone.

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Dekalb—FF; Lily—U
Hydric soils: No

19E—Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains (fig. 6)
Position on the landform: Summits, shoulders, and backslopes; in some areas, the rock outcrops are near-vertical cliffs

Map Unit Composition

Note: This Dekalb soil and Rock outcrop occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 60 percent, ranging from about 50 to 70 percent
Rock outcrop: Typically 30 percent, ranging from about 20 to 40 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of outcrops of sandstone bedrock. Outcrops range from a few inches high to about 100 feet high; some occur as near-vertical cliffs.

Minor Components

Dissimilar components:
- Berks and Weikert soils, which occur over shale bedrock and have more silt and less sand in the subsoil than the Dekalb soil; on similar landforms
- Oriskany soils, which are very deep to bedrock; on footslopes
- Lily soils, which have more clay and fewer rock fragments in the subsoil than the Dekalb soil; on similar landforms
- Soils that have a very rubbly surface; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Soils that are very deep to bedrock; on similar landforms

Similar components:
- Alticrest soils, which have fewer rock fragments throughout than the Dekalb soil; on similar landforms
- Lehew soils, which have a redder subsoil than the Dekalb soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or that are more than 80 percent; on similar landforms

Properties and Qualities of the Dekalb Soil

Available water capacity: Very low (about 1.9 inches)
Slowest saturated hydraulic conductivity: High (about 6.0 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.0 to 15.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The volume of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of the rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, this map unit is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Dekalb—7s; Rock outcrop—none assigned
Virginia soil management group: Dekalb—FF; Rock outcrop—none assigned
Hydric soils: No

20E—Dekalb-Watahala-McClung complex, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains

Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Dekalb, Watahala, and McClung soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Dekalb and similar soils: Typically 35 percent, ranging from about 15 to 45 percent
Watahala and similar soils: Typically 30 percent, ranging from about 20 to 40 percent
McClung and similar soils: Typically 20 percent, ranging from about 10 to 30 percent

Typical Profile

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Watahala

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown very gravelly sandy loam

Subsurface layer:
3 to 12 inches—yellowish brown gravelly silt loam

Subsoil:
12 to 27 inches—yellowish brown gravelly silt loam
27 to 37 inches—yellowish brown gravelly loam
37 to 54 inches—strong brown gravelly clay; light brown mottles
54 to 61 inches—strong brown silty clay; light brown mottles

McClung

Organic layer:
0 to 2 inches—moderately decomposed plant material

Subsurface layer:
2 to 3 inches—light gray sandy loam

Subsoil:
3 to 19 inches—yellowish brown sandy loam
19 to 28 inches—strong brown sandy clay loam
28 to 38 inches—strong brown sandy clay loam; red mottles
38 to 51 inches—yellowish red sandy clay loam; red and brownish yellow mottles
51 to 65 inches—reddish yellow sandy clay loam; yellow mottles

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments in the soil; on footslopes
- Lily soils, which have more than 18 percent clay and less than 35 percent rock fragments in the subsoil; on similar landforms
- Caneyville soils, which are moderately deep to limestone bedrock and have more clay than the Dekalb, Watahala, and McClung soils; on similar landforms
- Soils that are very shallow to bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Alticrest soils, which are moderately deep to sandstone bedrock and have fewer rock fragments in the soil than the Dekalb soil; on similar landforms
- Frederick soils, which are very deep to bedrock and have more clay in the subsoil than the Dekalb, Watahala, and McClung soils; on similar landforms
- Murrill soils, which are very deep to bedrock and have fewer rock fragments in the soil than Dekalb soil; on footslopes
- Soils that are shallow to very deep to bedrock and have more than 35 percent chert gravel throughout; on similar landforms
- Soils that are shallow to sandstone or chert bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Dekalb—very low (about 1.9 inches); Watahala—moderate (about 6.8 inches); McClung—moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Dekalb—high (about 6.0 in/hr); Watahala—moderately high (about 0.2 in/hr); McClung—moderately high (about 0.6 in/hr)
Depth class: Dekalb—moderately deep (20 to 40 inches); Watahala and McClung—very deep (more than 60 inches)
Depth to root-restrictive feature: Dekalb—20 to 40 inches to bedrock (lithic); Watahala and McClung—more than 60 inches
Drainage class: Dekalb—excessively drained; Watahala and McClung—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Dekalb and McClung—low; Watahala—moderate
Runoff class: Dekalb—very high; Watahala and McClung—high
Surface fragments: Dekalb—about 0.01 to 0.1 percent subangular stones; Watahala and McClung—none
Parent material: Dekalb—residuum weathered from sandstone; Watahala—gravelly residuum over clayey residuum weathered from cherty limestone; McClung—residuum weathered from sandstone with interbeds of limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak, chestnut oak, and eastern white pine

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Dekalb—FF; Watahala and McClung—M
Hydric soils: No

21A—Dunning silt loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low to intermediate level floodplains in river valleys
Position on the landform: Floodplain steps

Map Unit Composition

Dunning and similar soils: Typically 75 percent, ranging from about 60 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silt loam

Subsurface layer:
3 to 10 inches—very dark grayish brown silty clay loam; brown iron-manganese masses

Subsoil:
10 to 13 inches—dark grayish brown silty clay loam; brown iron-manganese masses
13 to 16 inches—dark gray silty clay loam; brown iron-manganese masses
16 to 32 inches—gray silty clay; reddish brown and brown iron-manganese masses

Substratum:
32 to 60 inches—dark gray silty clay loam; reddish brown iron-manganese masses

Minor Components

Dissimilar components:
- Massanetta soils, which are moderately well drained and have more carbonates throughout than the Dunning soil; on similar landforms
- Soils that do not flood; on higher landforms

Similar components:
- Soils that have less clay than the Dunning soil; on similar landforms
- Soils that are deep to limestone bedrock; on similar landforms
- Soils that flood rarely or frequently; on similar landforms
- Areas that have water on the surface; in backswamps and depressions

Soil Properties and Qualities

Available water capacity: High (about 9.2 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 6 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Alluvium derived from limestone

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn; not suited to grass-legume hay and alfalfa hay
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Flooding may damage crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Poorly suited for northern red oak
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the flooding and the seasonal high water table, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: NN
Hydric soil: Yes

22B—Escatawba loam, 3 to 8 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Escatawba and similar soils: Typically 80 percent, ranging from about 75 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown loam

Subsoil:
3 to 30 inches—yellowish brown loam
30 to 44 inches—strong brown clay loam; yellowish red masses of oxidized iron
44 to 50 inches—yellowish brown and strong brown gravelly clay loam; pale brown iron depletions
50 to 65 inches—strong brown cobbly clay loam; pinkish gray iron depletions and yellowish red masses of oxidized iron

Minor Components

Dissimilar components:
- Shelocta soils, which do not have a perched seasonal high water table; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout and do not have a perched seasonal high water table; on similar landforms
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Soils that are poorly drained; on similar landforms

Similar components:
- Soils that have a fragipan; on similar landforms
- Soils that are moderately well drained; on similar landforms
- Soils that have less clay in the lower part of the subsoil than the Escatawba soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have more clay in the upper part of the subsoil than the Escatawba soil; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 30 to 48 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0 to 1.0 percent subrounded boulders and about 0.1 to 2.0 percent subrounded stones
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to eastern white pine
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: L
Hydric soil: No

22C—Escatawba loam, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Escatawba and similar soils: Typically 80 percent, ranging from about 75 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown loam

Subsoil:
3 to 30 inches—yellowish brown loam
30 to 44 inches—strong brown clay loam; yellowish red masses of oxidized iron
44 to 50 inches—yellowish brown and strong brown gravelly clay loam; pale brown iron depletions
50 to 65 inches—strong brown cobbly clay loam; pinkish gray iron depletions and yellowish red masses of oxidized iron

Minor Components

Dissimilar components:
- Shelocta soils, which do not have a perched seasonal high water table; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout and do not have a perched seasonal high water table; on similar landforms
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Soils that are poorly drained; on similar landforms

Similar components:
- Soils that have a fragipan; on similar landforms
- Soils that are moderately well drained; on similar landforms
- Soils that have less clay in the lower part of the subsoil than the Escatawba soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have more clay in the upper part of the subsoil than the Escatawba soil; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 30 to 48 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.1 to 2.0 percent subrounded stones and about 0.0 to 1.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Moderately suited to pasture
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to eastern white pine
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: L
Hydric soil: No

22D—Escatawba loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas in valleys
Position on the landform: Footslopes

Map Unit Composition

Escatawba and similar soils: Typically 75 percent, ranging from about 60 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown loam

Subsoil:
3 to 30 inches—yellowish brown loam
30 to 44 inches—strong brown clay loam; yellowish red masses of oxidized iron
44 to 50 inches—yellowish brown and strong brown gravelly clay loam; pale brown iron depletions
50 to 65 inches—strong brown cobbly clay loam; pinkish gray iron depletions and yellowish red masses of oxidized iron

Minor Components

Dissimilar components:

- Shelocta soils, which do not have a perched seasonal high water table; on similar landforms

- Oriskany soils, which have more than 35 percent rock fragments throughout and do not have a perched seasonal high water table; on similar landforms
- Berks and Weikert soils, which are moderately deep and shallow to shale bedrock, respectively; on hills

Similar components:
- Soils that have a fragipan; on similar landforms
- Soils that are moderately well drained; on similar landforms
- Soils that have less clay in the lower part of the subsoil than the Escatawba soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that have more clay in the upper part of the subsoil than the Escatawba soil; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 30 to 48 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0 to 1.0 percent subrounded boulders and about 0.1 to 2.0 percent subrounded stones
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: L
Hydric soil: No

23C—Faywood-Poplimento complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Faywood and Poplimento soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Faywood and similar soils: Typically 50 percent, ranging from about 30 to 55 percent
Poplimento and similar soils: Typically 40 percent, ranging from about 30 to 55 percent

Typical Profile

Faywood

Surface layer:
0 to 6 inches—dark brown silty clay loam

Subsoil:
6 to 15 inches—dark yellowish brown clay
15 to 24 inches—dark yellowish brown clay; very dark gray mottles

Hard bedrock:
24 inches—limestone and shale bedrock

Poplimento

Surface layer:
0 to 5 inches—dark yellowish brown silty clay loam

Subsoil:
5 to 20 inches—yellowish red silty clay

20 to 35 inches—yellowish red silty clay; yellow mottles
35 to 50 inches—yellowish red and brownish yellow silty clay loam
50 to 60 inches—yellowish red and brownish yellow channery silty clay loam

Minor Components

Dissimilar components:
- Berks soils, which are moderately deep to shale bedrock and have more than 35 percent rock fragments in the subsoil; on similar landforms
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Caneyville soils, which are moderately deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms
- Frederick soils, which are very deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms
- Murrill soils, which have less clay in the upper part of the soil than the Faywood and Poplimento soils; on footslopes
- Soils that are shallow or deep to limestone or shale bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Faywood—very low (about 2.7 inches); Poplimento—moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Faywood—moderately low (about 0.06 in/hr); Poplimento—moderately high (about 0.2 in/hr)
Depth class: Faywood—moderately deep (20 to 40 inches); Poplimento—very deep (more than 60 inches)
Depth to root-restrictive feature: Faywood—20 to 40 inches to bedrock (lithic); Poplimento—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Faywood—moderate; Poplimento—high
Runoff class: Faywood—high; Poplimento—medium
Surface fragments: None
Parent material: Residuum weathered from limestone and shale

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Faywood—U; Poplimento—M
Hydric soils: No

23D—Faywood-Poplimento complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Faywood and Poplimento soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Faywood and similar soils: Typically 50 percent, ranging from about 30 to 55 percent
Poplimento and similar soils: Typically 40 percent, ranging from about 30 to 55 percent

Typical Profile

Faywood

Surface layer:
0 to 6 inches—dark brown silty clay loam

Subsoil:
6 to 15 inches—dark yellowish brown clay
15 to 24 inches—dark yellowish brown clay; very dark gray mottles

Hard bedrock:
24 inches—limestone and shale bedrock

Poplimento

Surface layer:
0 to 5 inches—dark yellowish brown silty clay loam

Subsoil:
5 to 20 inches—yellowish red silty clay
20 to 35 inches—yellowish red silty clay; yellow mottles
35 to 50 inches—yellowish red and brownish yellow silty clay loam
50 to 60 inches—yellowish red and brownish yellow channery silty clay loam

Minor Components

Dissimilar components:
- Berks soils, which are moderately deep to shale bedrock and have more than 35 percent rock fragments in the subsoil; on similar landforms
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Caneyville soils, which are moderately deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms
- Frederick soils, which are very deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms
- Murrill soils, which have less clay in the upper part of the soil than the Faywood and Poplimento soils; on footslopes
- Soils that are shallow or deep to limestone or shale bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Faywood—very low (about 2.7 inches); Poplimento—moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Faywood—moderately low (about 0.06 in/hr); Poplimento—moderately high (about 0.2 in/hr)
Depth class: Faywood—moderately deep (20 to 40 inches); Poplimento—very deep (more than 60 inches)
Depth to root-restrictive feature: Faywood—20 to 40 inches to bedrock (lithic); Poplimento—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None

Shrink-swell potential: Faywood—moderate; Poplimento—high
Runoff class: Faywood—very high; Poplimento—high
Surface fragments: None
Parent material: Residuum weathered from limestone and shale

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak; poorly suited to chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Faywood—U; Poplimento—M
Hydric soils: No

23E—Faywood-Poplimento complex, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Faywood and Poplimento soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Faywood and similar soils: Typically 45 percent, ranging from about 30 to 55 percent
Poplimento and similar soils: Typically 35 percent, ranging from about 20 to 50 percent

Typical Profile

Faywood

Surface layer:
0 to 6 inches—dark brown silty clay loam

Subsoil:
6 to 15 inches—dark yellowish brown clay
15 to 24 inches—dark yellowish brown clay; very dark gray mottles

Hard bedrock:
24 inches—limestone and shale bedrock

Poplimento

Surface layer:
0 to 5 inches—dark yellowish brown silty clay loam

Subsoil:
5 to 20 inches—yellowish red silty clay
20 to 35 inches—yellowish red silty clay; yellow mottles
35 to 50 inches—yellowish red and brownish yellow silty clay loam
50 to 60 inches—yellowish red and brownish yellow channery silty clay loam

Minor Components

Dissimilar components:
- Berks and Weikert soils, which are moderately deep and shallow to shale bedrock, respectively, and have more than 35 percent rock fragments in the subsoil; on similar landforms
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are very shallow to limestone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Caneyville soils, which are moderately deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms
- Frederick soils, which are very deep to bedrock and have redder subsoils than the Faywood and Poplimento soils; on similar landforms

- Murrill soils, which have less clay in the upper part of the soil than the Faywood and Poplimento soils; on footslopes
- Soils that are shallow or deep to limestone or shale bedrock; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Faywood—very low (about 2.7 inches); Poplimento—moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Faywood—moderately low (about 0.06 in/hr); Poplimento—moderately high (about 0.2 in/hr)
Depth class: Faywood—moderately deep (20 to 40 inches); Poplimento—very deep (more than 60 inches)
Depth to root-restrictive feature: Faywood—20 to 40 inches to bedrock (lithic); Poplimento—more than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Faywood—moderate; Poplimento—high
Runoff class: Faywood—very high; Poplimento—high
Surface fragments: None
Parent material: Residuum weathered from limestone and shale

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak; poorly suited to chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Figure 7.—Pasture in an area of Frederick silt loam, 8 to 15 percent slopes.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Faywood—U; Poplimento—M
Hydric soils: No

24C—Frederick silt loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills (fig. 7)
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Frederick and similar soils: Typically 75 percent, ranging from about 60 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay; strong brown mottles
46 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and have yellower colors than the Frederick soil; on similar landforms
- Watahala soils, which have more chert gravel in the upper part of the soil than the Frederick soil; on similar landforms
- Murrill soils, which have less clay in the upper part of the soil than the Frederick soil; on footslopes
- Soils that are deep to limestone or chert bedrock; on similar landforms
- Soils that are on slopes that are less than 8 percent or that range from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak
- This soil is well suited to haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

24D—Frederick silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Frederick and similar soils: Typically 75 percent, ranging from about 60 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay; strong brown mottles
46 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and have yellower colors than the Frederick soil; on similar landforms
- Watahala soils, which have more chert gravel in the upper part of the soil than the Frederick soil; on similar landforms
- Murrill soils, which have less clay in the upper part of the soil than the Frederick soil; on footslopes
- Soils that are deep to limestone or chert bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 25 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and creates unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: M
Hydric soil: No

25C—Frederick-Watahala complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Frederick and Watahala soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Frederick and similar soils: Typically 50 percent, ranging from about 35 to 60 percent
Watahala and similar soils: Typically 40 percent, ranging from about 25 to 50 percent

Typical Profile

Frederick

Surface layer:
0 to 3 inches—brown gravelly silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay

20 to 46 inches—yellowish red silty clay
46 to 72 inches—yellowish red silty clay

Watahala

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown very gravelly sandy loam

Subsurface layer:
3 to 12 inches—yellowish brown gravelly silt loam

Subsoil:
12 to 27 inches—yellowish brown gravelly silt loam
27 to 37 inches—yellowish brown gravelly loam
37 to 54 inches—strong brown gravelly clay; light brown mottles
54 to 61 inches—strong brown silty clay; light brown mottles

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes
- Soils that are shallow to limestone or chert bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and have yellower colors than the Frederick and Watahala soils; on similar landforms
- McClung soils, which have less clay in the upper part of the subsoil than the Frederick and Watahala soils; on similar landforms
- Murrill soils, which have less clay in the upper part of the subsoil than the Frederick and Watahala soils; on footslopes
- Soils that are deep to limestone or chert bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that are less than 8 percent or that range from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Frederick—moderate (about 8.5 inches); Watahala—moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Frederick—moderately high (about 0.6 in/hr); Watahala—moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: Frederick—about 3.0 to 15.0 percent coarse angular gravel;

Watahala—about 2.0 to 10.0 percent coarse angular gravel and about 1.0 to 5.0 percent angular cobbles

Parent material: Frederick—residuum weathered from limestone; Watahala—gravelly residuum over clayey residuum weathered from cherty limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Frederick—3e; Watahala—4s
Virginia soil management group: M
Hydric soils: No

25D—Frederick-Watahala complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Frederick and Watahala soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Frederick and similar soils: Typically 50 percent, ranging from about 35 to 60 percent
Watahala and similar soils: Typically 40 percent, ranging from about 25 to 50 percent

Typical Profile

Frederick

Surface layer:
0 to 3 inches—brown gravelly silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 46 inches—yellowish red silty clay
46 to 72 inches—yellowish red silty clay

Watahala

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown very gravelly sandy loam

Subsurface layer:
3 to 12 inches—yellowish brown gravelly silt loam

Subsoil:
12 to 27 inches—yellowish brown gravelly silt loam
27 to 37 inches—yellowish brown gravelly loam
37 to 54 inches—strong brown gravelly clay; light brown mottles
54 to 61 inches—strong brown silty clay; light brown mottles

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes
- Soils that are shallow to limestone or chert bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Poplimento soils, which are very deep to bedrock and have yellower colors than the Frederick and Watahala soils; on similar landforms
- McClung soils, which have less clay in the upper part of the subsoil than the Frederick and Watahala soils; on similar landforms
- Murrill soils, which have less clay in the upper part of the subsoil than the Frederick and Watahala soils; on footslopes
- Soils that are deep to limestone or chert bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Frederick—moderate (about 8.5 inches); Watahala—moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Frederick—moderately high (about 0.6 in/hr); Watahala—moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: Frederick—about 3.0 to 15.0 percent coarse angular gravel; Watahala—about 2.0 to 10.0 percent coarse angular gravel and about 1.0 to 5.0 percent angular cobbles
Parent material: Frederick—residuum weathered from limestone; Watahala—gravelly residuum over clayey residuum weathered from cherty limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

Woodland

Suitability: Well suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Frederick—6e; Watahala—6s
Virginia soil management group: M
Hydric soils: No

26C—Gilpin silt loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Gilpin and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown silt loam

Subsurface layer:
2 to 3 inches—yellowish brown channery silt loam

Subsoil:
3 to 7 inches—yellowish brown channery silt loam
7 to 26 inches—strong brown channery silty clay loam
26 to 32 inches—yellowish brown very channery silty clay loam; strong brown and pale brown mottles

Soft bedrock:
32 inches—pale olive shale bedrock

Minor Components

Dissimilar components:
- Escatawba soils, which are very deep to bedrock and have a perched seasonal high water table; on footslopes
- Weikert and Rough soils, which are shallow and very shallow to shale bedrock, respectively, and have more than 35 percent rock fragments throughout; on similar landforms
- Wharton and Blairton soils, which are moderately well drained; on similar landforms

Similar components:
- Berks soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are shallow or deep to shale bedrock; on similar landforms
- Soils that have a redder subsoil than the Gilpin soil; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to eastern white pine
- Bedrock may interfere with the construction of haul roads and log landings.

- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: U
Hydric soil: No

26D—Gilpin silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Gilpin and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown silt loam

Subsurface layer:
2 to 3 inches—yellowish brown channery silt loam

Subsoil:
3 to 7 inches—yellowish brown channery silt loam
7 to 26 inches—strong brown channery silty clay loam
26 to 32 inches—yellowish brown very channery silty clay loam; strong brown and pale brown mottles

Soft bedrock:
32 inches—pale olive shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock; on footslopes
- Escatawba soils, which are very deep to bedrock and have a perched seasonal high water table; on footslopes
- Weikert and Rough soils, which are shallow and very shallow to shale bedrock, respectively, and have more than 35 percent rock fragments throughout; on similar landforms
- Wharton and Blairton soils, which are moderately well drained; on similar landforms

Similar components:
- Berks soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are shallow or deep to shale bedrock; on similar landforms
- Soils that have a redder subsoil than the Gilpin soil; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 25 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to eastern white pine
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: U
Hydric soil: No

27A—Gladehill loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low to intermediate level floodplains in a river valley
Position on the landform: Floodplain steps

Map Unit Composition

Gladehill and similar soils: Typically 80 percent, ranging from about 65 to 95 percent

Typical Profile

Surface layer:
0 to 7 inches—very dark grayish brown loam (grayish brown, dry)

Subsurface layer:
7 to 14 inches—very dark grayish brown fine sandy loam (grayish brown, dry)

Subsoil:
14 to 40 inches—brown fine sandy loam
40 to 54 inches—brown sandy clay loam; black manganese coatings

Substratum:
54 to 60 inches—brown fine sandy loam

Minor Components

Dissimilar components:
- Alonzville soils, which are less susceptible to flooding and have more clay than the Gladehill soil; on stream terraces
- Coursey soils, which are less susceptible to flooding, are moderately well drained, have more clay than the Gladehill soil, and have a dark colored surface layer less than 6 inches thick; on stream terraces
- Ogles soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are protected from flooding; on similar landforms

Similar components:
- Wolfgap soils, which have more clay in the subsoil than the Gladehill soil; on similar landforms
- Soils that have a dark colored surface layer that is more than 24 inches thick; on similar landforms
- Soils that are more acid than the Gladehill soil; on similar landforms
- Soils that flood frequently or rarely; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 9.2 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Moderately suited to yellow-poplar
- Flooding may damage haul roads and restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the flooding, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

28A—Gladehill loam, 0 to 3 percent slopes, protected

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Floodplains in a river valley
Position on the landform: Floodplain steps
Note: This soil occurs on landform positions that are subject to flooding under natural conditions but that are currently protected from flooding due to a water-control structure located upstream

Map Unit Composition

Gladehill and similar soils: Typically 80 percent, ranging from about 65 to 95 percent

Typical Profile

Surface layer:
0 to 7 inches—very dark grayish brown loam (grayish brown, dry)

Subsurface layer:
7 to 14 inches—very dark grayish brown fine sandy loam (grayish brown, dry)

Subsoil:
14 to 40 inches—brown fine sandy loam
40 to 54 inches—brown sandy clay loam; black manganese coatings

Substratum:
54 to 60 inches—brown fine sandy loam

Minor Components

Dissimilar components:
- Alonzville soils, which are less susceptible to flooding and have more clay than the Gladehill soil; on stream terraces
- Coursey soils, which are less susceptible to flooding, are moderately well drained, have more clay than the Gladehill soil, and have a dark colored surface layer less than 6 inches thick; on stream terraces
- Ogles soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are subject to flooding; on similar landforms

Similar components:
- Soils that have a dark colored surface layer that is more than 24 inches thick; on similar landforms
- Wolfgap soils, which have more clay in the subsoil than the Gladehill soil; on similar landforms
- Soils that are more acid than the Gladehill soil; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 9.2 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is well suited to cropland.

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Moderately suited to yellow-poplar
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites
- This soil is well suited to building sites.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may result in pollution of the water table.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

29—Landfills

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)

Map Unit Composition

Landfills: Typically 85 percent, ranging from about 70 to 100 percent

Typical Profile

This map unit consists of sanitary landfills used for the disposal of household and other general waste material. The waste material is commonly mixed with soil material

as it is placed in the landfill. A typical profile is not given due to the variability of the material.

Use and Management Considerations

Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Not rated
Virginia soil management group: Not rated
Hydric soils: No

30C—Lehew-Berks complex, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Lehew and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Lehew and similar soils: Typically 50 percent, ranging from about 40 to 65 percent
Berks and similar soils: Typically 45 percent, ranging from about 30 to 55 percent

Typical Profile

Lehew

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—brown channery sandy loam

Subsoil:
2 to 21 inches—reddish brown very channery loam

Substratum:
21 to 27 inches—reddish brown extremely channery sandy loam

Hard bedrock:
27 inches—sandstone bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Rough soils, which are very shallow to shale bedrock; on similar landforms
- Soils that have more than 35 percent clay in the subsoil; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Dekalb soils, which have yellower colors and sandier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Alticrest, Lily, and Gilpin soils, which have fewer rock fragments throughout than the Lehew and Berks soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock; on similar landforms
- Soils that have redder colors and siltier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Soils that are deep to sandstone or shale bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Lehew—very low (about 2.2 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Lehew—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Lehew—somewhat excessively drained; Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Lehew—high; Berks—medium
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Lehew—red residuum weathered from sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Bedrock may interfere with the construction of haul roads and log landings.

- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: JJ
Hydric soils: No

30D—Lehew-Berks complex, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Lehew and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Lehew and similar soils: Typically 50 percent, ranging from about 40 to 65 percent
Berks and similar soils: Typically 45 percent, ranging from about 30 to 60 percent

Typical Profile

Lehew

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—brown channery sandy loam

Subsoil:
2 to 21 inches—reddish brown very channery loam

Substratum:
21 to 27 inches—reddish brown extremely channery sandy loam

Hard bedrock:
27 inches—sandstone bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta, Macove, and Oriskany soils, which are very deep to bedrock and formed in colluvium; on footslopes
- Rough soils, which are very shallow to shale bedrock; on similar landforms
- Soils that have more than 35 percent clay in the subsoil; on similar landforms
- Soils that have rubbly surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Dekalb soils, which have yellower colors and sandier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Alticrest, Lily, and Gilpin soils, which have fewer rock fragments throughout than the Lehew and Berks soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock; on similar landforms
- Soils that have redder colors and siltier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Soils that are deep to sandstone or shale bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Lehew—very low (about 2.2 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Lehew—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Lehew—somewhat excessively drained; Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Lehew—very high; Berks—high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Lehew—red residuum weathered from sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: JJ
Hydric soils: No

30E—Lehew-Berks complex, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Lehew and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Lehew and similar soils: Typically 45 percent, ranging from about 35 to 50 percent
Berks and similar soils: Typically 40 percent, ranging from about 30 to 45 percent

Typical Profile

Lehew

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—brown channery sandy loam

Subsoil:
2 to 21 inches—reddish brown very channery loam

Substratum:
21 to 27 inches—reddish brown extremely channery sandy loam

Hard bedrock:
27 inches—sandstone bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta, Macove, and Oriskany soils, which are very deep to bedrock and formed in colluvium; on footslopes
- Rough soils, which are very shallow to shale bedrock; on similar landforms
- Soils that have more than 35 percent clay in the subsoil; on similar landforms
- Soils that have rubbly surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Dekalb soils, which have yellower colors and sandier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Alticrest, Lily, and Gilpin soils, which have fewer rock fragments throughout than the Lehew and Berks soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock; on similar landforms
- Soils that have redder colors and siltier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Soils that are deep to sandstone or shale bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Lehew—very low (about 2.2 inches); Berks—very low (about 2.7 inches)

Slowest saturated hydraulic conductivity: Lehew—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Lehew—somewhat excessively drained; Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Lehew—very high; Berks—high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Lehew—red residuum weathered from sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

31F—Lehew-Berks-Rock outcrop complex, 55 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Lehew and Berks soils and Rock outcrop occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Lehew and similar soils: Typically 45 percent, ranging from about 30 to 55 percent
Berks and similar soils: Typically 40 percent, ranging from about 30 to 55 percent
Rock outcrop: Typically 10 percent, ranging from about 1 to 12 percent

Typical Profile

Lehew

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—brown channery sandy loam

Subsoil:
2 to 21 inches—reddish brown very channery loam

Substratum:
21 to 27 inches—reddish brown extremely channery sandy loam

Hard bedrock:
27 inches—sandstone bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Rock outcrop

This part of the map unit consists of outcrops of sandstone bedrock. The outcrops range from a few inches high to about 5 feet high.

Minor Components

Dissimilar components:
- Shelocta, Macove, and Oriskany soils, which are very deep to bedrock and formed in colluvium; on footslopes

- Rough soils, which are very shallow to shale bedrock; on similar landforms
- Soils that have more than 35 percent clay in the subsoil; on similar landforms
- Soils that have rubbly surfaces; on similar landforms

Similar components:
- Dekalb soils, which have yellower colors and sandier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Alticrest, Lily, and Gilpin soils, which have fewer rock fragments throughout than the Lehew and Berks soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock; on similar landforms
- Soils that have redder colors and siltier textures in the subsoil than the Lehew and Berks soils; on similar landforms
- Soils that are deep to sandstone or shale bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent or that are more than 80 percent; on similar landforms

Properties and Qualities of the Lehew and Berks Soils

Available water capacity: Lehew—very low (about 2.2 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Lehew—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Lehew—somewhat excessively drained; Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Lehew—very high; Berks—high
Surface fragments: About 3.0 to 15.0 percent subangular stones
Parent material: Lehew—red residuum weathered from sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The volume of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of the rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, this map unit is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Lehew and Berks—7s; Rock outcrop—none assigned
Virginia soil management group: Lehew and Berks—JJ; Rock outcrop—none assigned
Hydric soils: No

32C—Lily sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Lily and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—black sandy loam

Subsoil:
3 to 17 inches—yellowish brown loam
17 to 27 inches—yellowish brown clay loam
27 to 32 inches—strong brown gravelly clay loam

Hard bedrock:
32 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to sandstone bedrock; on similar landforms
- Berks and Dekalb soils, which have more rock fragments throughout than the Lily soil; on similar landforms

- Soils that are very shallow to sandstone bedrock; on similar landforms
- Soils that are moderately well drained and have more clay in the subsoil than the Lily soil; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Alticrest soils, which have less clay than the Lily soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from less than 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak and eastern white pine
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: U
Hydric soil: No

33D—Lily sandy loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Lily and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—black sandy loam

Subsoil:
3 to 17 inches—yellowish brown loam
17 to 27 inches—yellowish brown clay loam
27 to 32 inches—strong brown gravelly clay loam

Hard bedrock:
32 inches—sandstone bedrock

Minor Components

Dissimilar components:
- McClung soils, which are very deep to sandstone bedrock; on similar landforms

- Berks and Dekalb soils, which have more rock fragments throughout than the Lily soil; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Soils that are moderately well drained and have more clay in the subsoil than the Lily soil; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Alticrest soils, which have less clay than the Lily soil; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.1 to 3.0 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak and eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: U
Hydric soil: No

34C—Lily-McClung-Dekalb complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically summits and shoulders; backslopes in some areas

Map Unit Composition

Note: These Lily, McClung, and Dekalb soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Lily and similar soils: Typically 45 percent, ranging from about 35 to 55 percent
McClung and similar soils: Typically 30 percent, ranging from about 20 to 45 percent
Dekalb and similar soils: Typically 20 percent, ranging from about 10 to 25 percent

Typical Profile

Lily

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—black sandy loam

Subsoil:
3 to 17 inches—yellowish brown loam
17 to 27 inches—yellowish brown clay loam
27 to 32 inches—strong brown gravelly clay loam

Hard bedrock:
32 inches—sandstone bedrock

McClung

Organic layer:
0 to 2 inches—moderately decomposed plant material

Subsurface layer:
2 to 3 inches—light gray sandy loam

Subsoil:
3 to 19 inches—yellowish brown sandy loam
19 to 28 inches—strong brown sandy clay loam
28 to 38 inches—strong brown sandy clay loam; red mottles
38 to 51 inches—yellowish red sandy clay loam; red and brownish yellow mottles
51 to 65 inches—reddish yellow sandy clay loam; yellow mottles

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Soils that are very shallow to sandstone bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that contain sinkholes; on similar landforms

Similar components:
- Alticrest soils, which are moderately deep to sandstone bedrock; on similar landforms
- Soils that have less sand and more silt in the subsoil than the Lily, McClung, and Dekalb soils; on similar landforms
- Soils that are shallow or deep to sandstone bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that are less than 8 percent or that range from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Lily—low (about 4.0 inches); McClung—moderate (about 7.4 inches); Dekalb—very low (about 1.9 inches)
Slowest saturated hydraulic conductivity: Lily and McClung—moderately high (about 0.6 in/hr); Dekalb—high (about 6.0 in/hr)
Depth class: Lily and Dekalb—moderately deep (20 to 40 inches); McClung—very deep (more than 60 inches)
Depth to root-restrictive feature: Lily and Dekalb—20 to 40 inches to bedrock (lithic); McClung—more than 60 inches
Drainage class: Lily and McClung—well drained; Dekalb—excessively drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Lily and Dekalb—high; McClung—medium
Surface fragments: Lily and McClung—none; Dekalb—about 0.01 to 0.1 percent subangular stones
Parent material: Lily and Dekalb—residuum weathered from sandstone; McClung—residuum weathered from sandstone with interbeds of limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery and interfere with the emergence of seedlings.
- The bedrock restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.
- Rock fragments on the surface may restrict the operation of farm machinery.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak and eastern white pine
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Lily and McClung—3e; Dekalb—7s
Virginia soil management group: Lily—U; McClung—M; Dekalb—FF
Hydric soils: No

35C—Macove channery silt loam, 3 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and mountains and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Macove and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 1 inch—dark brown channery silt loam

Subsurface layer:
1 to 4 inches—brown channery loam

Subsoil:
4 to 7 inches—yellowish brown channery silt loam
7 to 14 inches—yellowish brown very channery silt loam
14 to 23 inches—yellowish brown very channery silty clay loam
23 to 37 inches—strong brown very channery silty clay loam
37 to 65 inches—brown extremely channery silty clay loam; black iron-manganese concretions

Minor Components

Dissimilar components:
- Berks soils, which are moderately deep to shale bedrock; on hills or mountains
- Lehew soils, which are moderately deep to sandstone bedrock; on hills or mountains
- Weikert and Rough soils, which are shallow and very shallow to bedrock, respectively; on simliar landforms
- Ogles soils, which are susceptible to flooding; on floodplains
- Coursey soils, which are moderately well drained; on terraces
- Soils that have rubbly or very rubbly surfaces; on similar landforms

Similar components:
- Oriskany soils, which have more sand and less silt throughout than the Macove soil; on similar landforms
- Shelocta soils, which have fewer rock fragments throughout than the Macove soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have a seasonal high water table with an upper limit at a depth of 40 to 72 inches; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Soils that are on slopes that are less than 8 percent or that range from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Low (about 4.6 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 0.1 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Colluvium derived from shale, siltstone, and sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to northern red oak, chestnut oak, and eastern white pine
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: CC
Hydric soil: No

36A—Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low to intermediate level floodplains in river valleys
Position on the landform: Floodplain steps, especially below springs flowing from limestone

Map Unit Composition

Massanetta and similar soils: Typically 75 percent, ranging from about 60 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—dark brown silt loam

Subsurface layer:
10 to 12 inches—dark brown loam

Subsoil:
12 to 24 inches—brown silt loam
24 to 28 inches—brown loam; dark yellowish brown masses of oxidized iron
28 to 39 inches—brown loam; grayish brown iron depletions and yellowish brown masses of oxidized iron

Substratum:
39 to 50 inches—grayish brown loam; yellowish brown and dark yellowish brown masses of oxidized iron
50 to 61 inches—grayish brown sandy loam; yellowish brown and strong brown masses of oxidized iron
61 to 70 inches—pale brown loamy sand; strong brown and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Dunning soils, which are poorly drained and have more than 35 percent clay in the subsoil; on similar landforms
- Purdy soils, which are poorly drained and have more than 35 percent clay in the subsoil; on similar or slightly higher landforms
- Zoar soils, which are moderately well drained and have more clay than the Massanetta soil; on higher landforms
- Soils that have limestone bedrock within a depth of 40 inches; on similar landforms

Similar components:
- Soils that are somewhat poorly drained; on similar landforms
- Soils that are deep to limestone bedrock; on similar landforms
- Soils that do not have identifiable secondary carbonates throughout; on similar landforms
- Soils that have less than 40 percent carbonatic minerals; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 11.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)

Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 24 to 42 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to yellow-poplar
- Flooding may damage haul roads and restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the flooding, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: A
Hydric soil: No

37D—McClung-Watahala-Dekalb complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These McClung, Watahala, and Dekalb soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

McClung and similar soils: Typically 45 percent, ranging from about 35 to 55 percent
Watahala and similar soils: Typically 25 percent, ranging from about 15 to 30 percent
Dekalb and similar soils: Typically 20 percent, ranging from about 10 to 25 percent

Typical Profile

McClung

Organic layer:
0 to 2 inches—moderately decomposed plant material

Subsurface layer:
2 to 3 inches—light gray sandy loam

Subsoil:
3 to 19 inches—yellowish brown sandy loam
19 to 28 inches—strong brown sandy clay loam
28 to 38 inches—strong brown sandy clay loam; red mottles
38 to 51 inches—yellowish red sandy clay loam; red and brownish yellow mottles
51 to 65 inches—reddish yellow sandy clay loam; yellow mottles

Watahala

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown very gravelly sandy loam

Subsurface layer:
3 to 12 inches—yellowish brown gravelly silt loam

Subsoil:
12 to 27 inches—yellowish brown gravelly silt loam
27 to 37 inches—yellowish brown gravelly loam
37 to 54 inches—strong brown gravelly clay; light brown mottles
54 to 61 inches—strong brown silty clay; light brown mottles

Dekalb

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—very dark grayish brown channery sandy loam

Subsoil:
2 to 30 inches—yellowish brown very channery sandy loam

Hard bedrock:
30 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Oriskany soils, which are very deep to bedrock and have more than 35 percent rock fragments in the soil; on footslopes
- Lily soils, which have more than 18 percent clay and less than 35 percent rock fragments in the subsoil and are moderately deep to sandstone bedrock; on similar landforms
- Caneyville soil, which have more than 35 percent clay and less than 35 percent rock fragments in the subsoil and are moderately deep to limestone bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Alticrest soils, which are moderately deep to sandstone bedrock and have fewer rock fragments in the soil than the Dekalb soil; on similar landforms
- Frederick soils, which are very deep to bedrock and have more clay in the subsoil than the McClung, Watahala, and Dekalb soils; on similar landforms
- Murrill soils, which are very deep to bedrock and have fewer rock fragments in the soil than the Dekalb soil; on footslopes
- Soils that are shallow to very deep and have more than 35 percent chert gravel throughout; on similar landforms
- Soils that are shallow to sandstone or chert bedrock; on similar landforms
- Soils that have very stony surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: McClung—moderate (about 7.4 inches); Watahala—moderate (about 6.8 inches); Dekalb—very low (about 1.9 inches)
Slowest saturated hydraulic conductivity: McClung—moderately high (about 0.6 in/hr); Watahala—moderately high (about 0.2 in/hr); Dekalb—high (about 6.0 in/hr)
Depth class: McClung and Watahala—very deep (more than 60 inches); Dekalb—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: McClung and Watahala—more than 60 inches; Dekalb—20 to 40 inches to bedrock (lithic)
Drainage class: McClung and Watahala—well drained; Dekalb—excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: McClung and Dekalb—low; Watahala—moderate
Runoff class: McClung and Watahala—high; Dekalb—very high
Surface fragments: McClung and Watahala—none; Dekalb—about 0.01 to 0.10 percent subangular stones
Parent material: McClung—residuum weathered from sandstone with interbeds of limestone; Watahala—gravelly residuum over clayey residuum weathered from cherty limestone; Dekalb—residuum weathered from sandstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.
- Rock fragments on the surface may restrict the operation of farm machinery.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: McClung—6e; Watahala and Dekalb—7s
Virginia soil management group: McClung and Watahala—M; Dekalb—FF
Hydric soils: No

Figure 8.—An area of Murrill loam, 3 to 8 percent slopes. The foreground is prime farmland located in Rich Patch Valley.

38B—Murrill loam, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys (fig. 8)
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Murrill and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; iron-manganese masses
40 to 65 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on similar landforms

- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on hills
- Escatawba soils, which have a perched seasonal high water table that has an upper limit at a depth of about 30 to 48 inches; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Frederick and Poplimento soils, which have more clay in the soil than the Murrill soil; on hills
- Soils that have very stony surfaces; on similar landforms
- Soils that are deep to limestone bedrock; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: L
Hydric soil: No

38C—Murrill loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Murrill and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; iron-manganese masses
40 to 65 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on hills
- Escatawba soils, which have a perched seasonal high water table that has an upper limit at a depth of about 30 to 48 inches; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Frederick and Poplimento soils, which have more clay in the soil than the Murrill soil; on hills
- Soils that have very stony surfaces; on similar landforms
- Soils that are deep to limestone bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)

Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: L
Hydric soil: No

38D—Murrill loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and areas in valleys
Position on the landform: Footslopes

Map Unit Composition

Murrill and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; iron-manganese masses
40 to 65 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on hills
- Escatawba soils, which have a perched seasonal high water table that has an upper limit at a depth of about 30 to 48 inches; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Frederick and Poplimento soils, which have more clay than the Murrill soil; on hills
- Soils that have very stony surfaces; on similar landforms
- Soils that are deep to limestone bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 25 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None

Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: L
Hydric soil: No

39C—Murrill cobbly loam, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)

Landform: Areas at the base of slopes of hills and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Murrill and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown cobbly loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; brownish yellow mottles and black iron-manganese masses
40 to 65 inches—yellowish red silty clay; black iron-manganese masses

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Caneyville and Faywood soils, which are moderately deep to bedrock; on hills
- Escatawba soils, which have a perched seasonal high water table that has an upper limit at a depth of about 30 to 48 inches; on similar landforms
- Soils that have a rubbly surface; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Frederick and Poplimento soils, which have more clay than the Murrill soil; on hills
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are deep to limestone or sandstone bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: About 0.5 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the rock fragments, excavation is difficult and cutbanks are unstable.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: L
Hydric soil: No

39D—Murrill cobbly loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and areas in valleys
Position on the landform: Footslopes

Map Unit Composition

Murrill and similar soils: Typically 95 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown cobbly loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; brownish yellow mottles and black iron-manganese masses
40 to 65 inches—yellowish red silty clay; black iron-manganese masses

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Caneyville and Faywood soils, which are moderately deep to bedrock; on hills
- Escatawba soils, which have a perched seasonal high water table that has an upper limit at a depth of about 30 to 48 inches; on similar landforms
- Soils that have rubbly surfaces; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Frederick and Poplimento soils, which have more clay than the Murrill soil; on hills
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are deep to limestone or sandstone bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: About 0.5 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the rock fragments, excavation is difficult and cutbanks are unstable.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: L
Hydric soil: No

40B—Nicelytown silt loam, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Nicelytown and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsurface layer:
5 to 8 inches—brown silt loam; dark grayish brown and brown iron depletions

Subsoil:
8 to 17 inches—pale brown silty clay loam; yellowish brown masses of oxidized iron and brown iron depletions
17 to 26 inches—pale brown clay loam; yellowish brown masses of oxidized iron

26 to 34 inches—light yellowish brown clay loam; gray iron depletions and strong brown and brown masses of oxidized iron
34 to 48 inches—light brownish gray silty clay loam; yellowish brown and strong brown masses of oxidized iron
48 to 65 inches—light brownish gray gravelly silty clay loam; yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained; on similar landforms
- Cottonbend soils, which are well drained; on similar landforms
- Sugarhol soils, which are well drained and have more clay in the subsoil than the Nicelytown soil; on similar landforms
- Oriskany soils, which are well drained and have more rock fragments in the subsoil than the Nicelytown soil; on footslopes
- Berks and Weikert soils, which are moderately deep and shallow to bedrock, respectively; on hills

Similar components:
- Zoar soils, which have more clay in the upper part of the subsoil than the Nicelytown soil; on similar landforms
- Soils that are somewhat poorly drained with iron depletions between depths of 10 and 18 inches; on similar landforms
- Soils that are well drained with iron depletions between depths of 36 and 60 inches; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to eastern white pine
- This soil is well suited to haul roads and log landings.
- Soil wetness may limit the use of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: G
Hydric soil: No

40C—Nicelytown silt loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Nicelytown and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsurface layer:
5 to 8 inches—brown silt loam; dark grayish brown and brown iron depletions

Subsoil:
8 to 17 inches—pale brown silty clay loam; yellowish brown masses of oxidized iron and brown iron depletions
17 to 26 inches—pale brown clay loam; yellowish brown masses of oxidized iron
26 to 34 inches—light yellowish brown clay loam; gray iron depletions and strong brown and brown masses of oxidized iron
34 to 48 inches—light brownish gray silty clay loam; yellowish brown and strong brown masses of oxidized iron
48 to 65 inches—light brownish gray gravelly silty clay loam; yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained; on similar landforms
- Cottonbend soils, which are well drained; on similar landforms
- Sugarhol soils, which are well drained and have more clay in the subsoil than the Nicelytown soil; on similar landforms
- Oriskany soils, which are well drained and have more rock fragments in the subsoil than the Nicelytown soil; on footslopes
- Berks and Weikert soils, which are moderately deep and shallow to bedrock, respectively; on hills

Similar components:
- Zoar soils, which have more clay in the upper part of the subsoil than the Nicelytown soil; on similar landforms
- Soils that are somewhat poorly drained with iron depletions between depths of 10 and 18 inches; on similar landforms
- Soils that are well drained with iron depletions between depths of 36 and 60 inches; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.

- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to eastern white pine
- This soil is well suited to haul roads and log landings.
- Soil wetness may limit the use of log trucks.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: G
Hydric soil: No

41A—Ogles very cobbly loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low to intermediate level floodplains in a river valley (fig. 9)
Position on the landform: Floodplain steps

Figure 9.—An area of Ogles very cobbly loam, 0 to 3 percent slopes, occasionally flooded, along Smith Creek.

Map Unit Composition

Ogles and similar soils: Typically 80 percent, ranging from about 65 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown very cobbly loam

Subsoil:
5 to 28 inches—yellowish brown extremely cobbly sandy loam

Substratum:
28 to 47 inches—yellowish brown extremely cobbly sandy loam
47 to 60 inches—yellowish brown very cobbly sandy loam

Minor Components

Dissimilar components:
- Gladehill and Wolfgap soils, which have fewer rock fragments throughout than the Ogles soil and have thick, dark colored surface layers; on similar landforms
- Soils that are somewhat poorly drained; on similar landforms
- Soils that are fragmental; on similar landforms
- Soils that have sand and loamy sand textures throughout; on similar landforms
- Alluvial soils that are not prone to flooding; on similar landforms

Similar components:
- Soils that are less acid than the Ogles soil; on similar landforms
- Soils that are moderately well drained; on similar landforms
- Soils that have fewer rock fragments throughout than the Ogles soil; on similar landforms
- Soils that have a redder subsoil than the Ogles soil; on similar landforms

- Soils that have very stony surfaces; on similar landforms
- Alluvial soils that flood rarely or frequently; on similar landforms

Soil Properties and Qualities

Available water capacity: Very low (about 2.9 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 42 to 72 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- Because of the limited available water capacity, plants may suffer from moisture stress.
- Flooding may damage crops.

Pastureland

Suitability: Poorly suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- Flooding may damage pastures.

Woodland

Suitability: Moderately suited to eastern white pine
- Flooding may damage haul roads and restricts the safe use of roads by log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the flooding, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4s
Virginia soil management group: CC
Hydric soil: No

42B—Oriskany cobbly sandy loam, 3 to 8 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys
Position on the landform: Toeslopes and treads

Map Unit Composition

Oriskany and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Minor Components

Dissimilar components:
- Alonzville soils, which have fewer rock fragments in the soil than the Oriskany soil; on floodplains
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms
- Soils that have rubbly surfaces; on similar landforms
- Soils that are moderately well drained; on similar landforms

Similar components:
- Macove soils, which have more silt than the Oriskany soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from less than 3 percent or from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.5 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)

Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 0.5 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to chestnut oak
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may result in pollution of the water table.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: CC
Hydric soil: No

43C—Oriskany cobbly sandy loam, 8 to 15 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Oriskany and similar soils: Typically 75 percent, ranging from about 65 to 85 percent

Typical Profile

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Minor Components

Dissimilar components:
- Alonzville soils, which have fewer rock fragments in the soil than the Oriskany soil; on floodplains
- Berks, Lily, Dekalb, and Lehew soils, which are moderately deep to bedrock; on hills or mountains
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms
- Soils that have nonstony or very rubbly surfaces; on similar landforms
- Soils that are moderately well drained; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.5 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None

Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 3.0 to 10.0 percent subrounded stones and about 0 to 5.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: CC
Hydric soil: No

43D—Oriskany cobbly sandy loam, 15 to 35 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas in valleys
Position on the landform: Footslopes

Map Unit Composition

Oriskany and similar soils: Typically 75 percent, ranging from about 65 to 85 percent

Typical Profile

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Minor Components

Dissimilar components:
- Berks, Lily, Dekalb, and Lehew soils, which are moderately deep to bedrock; on hills or mountains
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms
- Soils that have nonstony or very rubbly surfaces; on similar landforms
- Soils that are moderately well drained; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.5 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 3.0 to 10.0 percent subrounded stones and about 0 to 5.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope and the content of rock fragments, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: CC
Hydric soil: No

43E—Oriskany cobbly sandy loam, 35 to 55 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas on mountains and hills
Position on the landform: Footslopes and the lower part of backslopes

Map Unit Composition

Oriskany and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Minor Components

Dissimilar components:
- Berks, Lily, Dekalb, and Lehew soils, which are moderately deep to bedrock; on hills or mountains
- Weikert and Rough soils, which are shallow and very shallow to bedrock, respectively; on hills
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms
- Soils that have nonstony surfaces; on similar landforms
- Soils that are moderately well drained; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.5 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 3.0 to 10.0 percent subrounded stones and about 0 to 5.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: CC
Hydric soil: No

44E—Oriskany extremely bouldery sandy loam, 25 to 55 percent slopes, very rubbly

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of mountains and hills and areas on mountains and hills (fig. 10)
Position on the landform: Footslopes and the lower part of backslopes

Map Unit Composition

Oriskany and similar soils: Typically 85 percent, ranging from about 80 to 95 percent

Typical Profile

Organic layer:
0 to 2 inches—slightly decomposed plant material

Figure 10.—An area of Oriskany extremely bouldery sandy loam, 25 to 55 percent slopes, very rubbly. Large boulders limit the use and management of this soil for woodland.

Surface layer:
2 to 6 inches—very dark grayish brown extremely bouldery sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Minor Components

Dissimilar components:
- Soils that have nonstony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany soil; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have rubbly surfaces or rubble land; on similar landforms
- Soils that are on slopes that range from 8 to 25 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 6.4 inches)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 10.0 to 20.0 percent subrounded stones and about 40.0 to 60.0 percent subrounded boulders
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The volume of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e

Virginia soil management group: CC
Hydric soil: No

45C—Oriskany-Murrill complex, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and areas in valleys
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Note: These Oriskany and Murrill soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Oriskany and similar soils: Typically 55 percent, ranging from about 45 to 65 percent
Murrill and similar soils: Typically 35 percent, ranging from about 25 to 40 percent

Typical Profile

Oriskany

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Murrill

Surface layer:
0 to 4 inches—brown cobbly loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; brownish yellow mottles and black iron-manganese masses
40 to 65 inches—yellowish red silty clay; black iron-manganese masses

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock and have more clay than the Oriskany and Murrill soils; on hills
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms

- Soils that are moderately well drained; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany and Murrill soils; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Oriskany—moderate (about 6.5 inches); Murrill—moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Oriskany—high (about 2.0 in/hr); Murrill—moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Oriskany—low; Murrill—moderate
Runoff class: Oriskany—low; Murrill—medium
Surface fragments: About 0.5 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Oriskany—colluvium derived from sandstone and shale; Murrill—colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: Oriskany—CC; Murrill—L
Hydric soils: No

45D—Oriskany-Murrill complex, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills and areas in valleys (fig. 11)
Position on the landform: Footslopes

Map Unit Composition

Note: These Oriskany and Murrill soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Oriskany and similar soils: Typically 55 percent, ranging from about 45 to 65 percent
Murrill and similar soils: Typically 35 percent, ranging from about 25 to 40 percent

Typical Profile

Oriskany

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Figure 11.—An area of Oriskany-Murrill complex, 15 to 35 percent slopes, very stony. The soils in this map unit have a moderately high potential for the production of trees.

Murrill

Surface layer:
0 to 4 inches—brown cobbly loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam
31 to 40 inches—yellowish red silty clay loam; brownish yellow mottles and black iron-manganese masses
40 to 65 inches—yellowish red silty clay; black iron-manganese masses

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock and have more clay than the Oriskany and Murrill soils; on hills
- Ogles soils, which are susceptible to flooding; on floodplains
- Escatawba soils, which have a seasonal high water table between depths of 36 and 48 inches; on similar landforms
- Soils that are moderately well drained; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany and Murrill soils; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have extremely stony surfaces; on similar landforms

- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Oriskany—moderate (about 6.5 inches); Murrill—moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Oriskany—high (about 2.0 in/hr); Murrill—moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Oriskany—low; Murrill—moderate
Runoff class: Oriskany—medium; Murrill—high
Surface fragments: About 0.5 to 2.0 percent subrounded stones and about 0 to 1.0 percent subrounded boulders
Parent material: Oriskany—colluvium derived from sandstone and shale; Murrill—colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope and the content of rock fragments, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: Oriskany—CC; Murrill—L
Hydric soils: No

45E—Oriskany-Murrill complex, 35 to 55 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas at the base of slopes of hills, areas in valleys, and areas on hills
Position on the landform: Footslopes and the lower part of backslopes

Map Unit Composition

Note: These Oriskany and Murrill soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Oriskany and similar soils: Typically 65 percent, ranging from about 55 to 80 percent
Murrill and similar soils: Typically 25 percent, ranging from about 10 to 40 percent

Typical Profile

Oriskany

Organic layer:
0 to 2 inches—slightly decomposed plant material

Surface layer:
2 to 6 inches—very dark grayish brown cobbly sandy loam

Subsurface layer:
6 to 11 inches—brown cobbly sandy loam

Subsoil:
11 to 40 inches—brown very cobbly loam
40 to 65 inches—brown extremely cobbly loam

Murrill

Surface layer:
0 to 4 inches—brown cobbly loam

Subsoil:
4 to 10 inches—yellowish brown channery silt loam
10 to 15 inches—strong brown channery silt loam
15 to 23 inches—strong brown channery silty clay loam
23 to 31 inches—yellowish red channery silty clay loam

31 to 40 inches—yellowish red silty clay loam; brownish yellow mottles and black iron-manganese masses
40 to 65 inches—yellowish red silty clay; black iron-manganese masses

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock and have more clay than the Oriskany and Murrill soils; on hills
- Soils that are moderately well drained; on similar landforms
- Areas that have sinkholes; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Macove soils, which have more silt throughout than the Oriskany and Murrill soils; on similar landforms
- Soils that are deep to shale or sandstone bedrock; on similar landforms
- Soils that have very stony or rubbly surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Oriskany—moderate (about 6.5 inches); Murrill—moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Oriskany—high (about 2.0 in/hr); Murrill—moderately high (about 0.2 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Oriskany—low; Murrill—moderate
Runoff class: Oriskany—medium; Murrill—high
Surface fragments: About 3.0 to 10.0 percent subrounded stones and about 0 to 5.0 percent subrounded boulders
Parent material: Oriskany—colluvium derived from sandstone and shale; Murrill—colluvium derived from sandstone and shale over residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.

- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Oriskany—CC; Murrill—L
Hydric soils: No

46A—Purdy silty clay loam, 0 to 3 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads, risers, and backswamps

Map Unit Composition

Purdy and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown silty clay loam; gray iron depletions and brown iron-manganese masses
4 to 8 inches—dark gray silty clay loam; dark yellowish brown iron-manganese masses

Subsoil:
8 to 13 inches—gray silty clay loam; dark yellowish brown iron-manganese masses
13 to 27 inches—gray silty clay; yellowish brown masses of oxidized iron
27 to 31 inches—gray clay; very dark grayish brown iron-manganese masses and yellowish brown masses of oxidized iron

Substratum:
31 to 60 inches—gray clay; very dark gray iron-manganese masses and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Zoar and Nicelytown soils, which are moderately well drained; on similar landforms
- Soils that flood rarely or occasionally; on lower landforms

Similar components:
- Soils that have more rock fragments than the Purdy soil; on similar landforms
- Soils that have less clay throughout than the Purdy soil; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are somewhat poorly drained; on similar landforms
- Soils that are on slopes that range from 3 to 5 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Low (about 0.001 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: Occasional
Depth of ponding: 0.0 to 0.5 foot
Shrink-swell potential: Moderate
Runoff class: Negligible
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn; not suited to grass-legume hay and alfalfa hay
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Well suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to white ash
- Ponding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.

- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the ponding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the ponding, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: NN
Hydric soil: Yes

47C—Shelocta-Berks complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains, hills, and valleys
Position on the landform: Shelocta—footslopes; Berks—lower backslopes and upper footslopes

Map Unit Composition

Note: These Shelocta and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Shelocta and similar soils: Typically 60 percent, ranging from about 50 to 75 percent
Berks and similar soils: Typically 20 percent, ranging from about 10 to 35 percent

Typical Profile

Shelocta

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 18 inches—brown channery silt loam
18 to 38 inches—strong brown channery silt loam
38 to 60 inches—brown channery silt loam
60 to 65 inches—brown channery silt loam; pale brown and light brownish gray iron depletions

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Rough soils, which are very shallow to shale bedrock; on hills
- Ogles soils, which have more than 35 percent rock fragments throughout; on floodplains
- Coursey soils, which are moderately well drained; on stream terraces
- Soils that are moderately well drained and have a dense layer in the subsoil; on footslopes
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which are moderately deep to shale bedrock and have less than 35 percent rock fragments throughout; on hills
- Weikert soils, which are shallow to bedrock; on hills
- Macove soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are deep to shale bedrock; on hills and footslopes
- Soils that have very stony surfaces; on hills and footslopes
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on hills and footslopes

Soil Properties and Qualities

Available water capacity: Shelocta—high (about 9.0 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Shelocta—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Shelocta—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Shelocta—colluvium derived from shale, siltstone, and some fine-grained sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to eastern white pine; moderately suited to northern red oak
- Bedrock may interfere with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Shelocta—L; Berks—JJ
Hydric soils: No

47D—Shelocta-Berks complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains, hills, and valleys
Position on the landform: Shelocta—footslopes; Berks—lower backslopes and upper footslopes

Map Unit Composition

Note: These Shelocta and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Shelocta and similar soils: Typically 60 percent, ranging from about 50 to 75 percent
Berks and similar soils: Typically 20 percent, ranging from about 10 to 30 percent

Typical Profile

Shelocta

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 18 inches—brown channery silt loam
18 to 38 inches—strong brown channery silt loam
38 to 60 inches—brown channery silt loam
60 to 65 inches—brown channery silt loam; pale brown and light brownish gray iron depletions

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Rough soils, which are very shallow to shale bedrock; on hills
- Ogles soils, which have more than 35 percent rock fragments throughout; on floodplains
- Coursey soils, which are moderately well drained; on stream terraces
- Soils that are moderately well drained and have a dense layer in the subsoil; on footslopes
- Soils that have extremely stony surfaces; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which are moderately deep to shale bedrock and have less than 35 percent rock fragments throughout; on hills
- Weikert soils, which are shallow to bedrock; on hills
- Macove soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are deep to shale bedrock; on hills and footslopes
- Soils that have very stony surfaces; on hills and footslopes
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on hills and footslopes

Soil Properties and Qualities

Available water capacity: Shelocta—high (about 9.0 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Shelocta—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)

Depth to root-restrictive feature: Shelocta—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Shelocta—colluvium derived from shale, siltstone, and some fine-grained sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to eastern white pine; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Shelocta—L; Berks—JJ
Hydric soils: No

47E—Shelocta-Berks complex, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains, hills, and valleys
Position on the landform: Shelocta—footslopes; Berks—lower backslopes and upper footslopes

Map Unit Composition

Note: These Shelocta and Berks soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Shelocta and similar soils: Typically 70 percent, ranging from about 55 to 85 percent
Berks and similar soils: Typically 25 percent, ranging from about 15 to 40 percent

Typical Profile

Shelocta

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 18 inches—brown channery silt loam
18 to 38 inches—strong brown channery silt loam
38 to 60 inches—brown channery silt loam
60 to 65 inches—brown channery silt loam; pale brown and light brownish gray iron depletions

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Minor Components

Dissimilar components:
- Rough soils, which are very shallow to shale bedrock; on hills
- Ogles soils, which have more than 35 percent rock fragments throughout; on floodplains
- Coursey soils, which are moderately well drained; on stream terraces
- Soils that are moderately well drained and have a dense layer in the subsoil; on footslopes
- Soils that have an extremely stony surface; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Weikert soils, which are shallow to bedrock; on hills

- Macove soils, which are very deep to bedrock and have more than 35 percent rock fragments throughout; on footslopes
- Soils that are deep to shale bedrock; on hills and footslopes
- Soils that have very stony surfaces; on hills and footslopes
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on hills and footslopes

Soil Properties and Qualities

Available water capacity: Shelocta—high (about 9.0 inches); Berks—very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Shelocta—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Shelocta—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Shelocta—colluvium derived from shale, siltstone, and some fine-grained sandstone; Berks—residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to eastern white pine; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.

- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Shelocta—L; Berks—JJ
Hydric soils: No

48B—Sugarhol silt loam, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Sugarhol and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Organic layer:
0 to 1 inch—highly decomposed plant material

Surface layer:
1 to 2 inches—dark grayish brown silt loam

Subsurface layer:
2 to 3 inches—grayish brown silt loam

Subsoil:
3 to 11 inches—light yellowish brown silt loam
11 to 34 inches—yellowish brown silty clay
34 to 53 inches—strong brown silty clay; light yellowish brown and yellowish red mottles
53 to 61 inches—yellowish brown clay; strong brown and light yellowish brown mottles

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on colluvial footslopes
- Escatawba soils, which have a perched seasonal high water table; on colluvial footslopes
- Purdy soils, which are poorly drained; on similar landforms
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Nicelytown and Zoar soils, which are moderately well drained; on similar landforms

Similar components:
- Cottonbend soils, which have less clay in the upper part of the subsoil than the Sugarhol soil; on similar landforms
- Alonzville soils, which have less clay throughout than the Sugarhol soil; on lower terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 35 percent pebbles or cobbles in the lower part of the subsoil; on similar landforms

- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; moderately suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to eastern white pine
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e

Virginia soil management group: O
Hydric soil: No

48C—Sugarhol silt loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Sugarhol and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Organic layer:
0 to 1 inch—highly decomposed plant material

Surface layer:
1 to 2 inches—dark grayish brown silt loam

Subsurface layer:
2 to 3 inches—grayish brown silt loam

Subsoil:
3 to 11 inches—light yellowish brown silt loam
11 to 34 inches—yellowish brown silty clay
34 to 53 inches—strong brown silty clay; light yellowish brown and yellowish red mottles
53 to 61 inches—yellowish brown clay; strong brown and light yellowish brown mottles

Minor Components

Dissimilar components:
- Oriskany soils, which have more than 35 percent rock fragments throughout; on colluvial footslopes
- Escatawba soils, which have a perched seasonal high water table; on colluvial footslopes
- Purdy soils, which are poorly drained; on similar landforms
- Gilpin soils, which are moderately deep to shale bedrock; on hills
- Berks, Weikert, and Rough soils, which are moderately deep, shallow, and very shallow to shale bedrock, respectively; on hills
- Nicelytown and Zoar soils, which are moderately well drained; on similar landforms

Similar components:
- Cottonbend soils, which have less clay in the upper part of the subsoil than the Sugarhol soil; on similar landforms
- Alonzville soils, which have less clay throughout than the Sugarhol soil; on lower terraces
- Soils that have very stony surfaces; on similar landforms
- Soils that have more than 35 percent pebbles or cobbles in the lower part of the subsoil; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 25 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Moderate (about 8.8 inches)

Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to eastern white pine
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland

Land capability class: 3e
Virginia soil management group: O
Hydric soil: No

49—Udorthents, smoothed-Rock outcrop complex, 1 to 65 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas along interstate highways, construction zones, and urban areas; the rock outcrops are near-vertical cliffs in some areas

Map Unit Composition

Note: The Udorthents and Rock outcrop occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Udorthents and similar soils: Typically 85 percent, ranging from about 70 to 95 percent
Rock outcrop: Typically 15 percent, ranging from about 5 to 30 percent

Typical Profile

Udorthents

This part of the map unit consists of areas of disturbed soil and rock material. The disturbance generally results from surface excavations and subsequent deposits of soil and rock material for construction projects. Udorthents have a variable mixture of soil textures and variable soil colors, rock fragment content, depth to bedrock, and drainage. Differential subsidence can occur in Udorthents.

Rock outcrop

This part of the map unit consists of outcrops of sandstone, shale, or limestone bedrock. The outcrops resulted from road construction or other earth-moving activities.

Minor Components

Dissimilar components:
- Berks, Weikert, and Rough soils, which are moderately deep, shallow, and very shallow to shale bedrock, respectively; on hills

Similar components:
- Soils that are covered by less than 20 inches of fill material; on similar areas
- Areas that have fewer rock outcrops

Use and Management Considerations

- Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: None assigned
Virginia soil management group: None assigned
Hydric soils: No

Figure 12.—A railyard in Clifton Forge in an area of Urban land-Udorthents, smoothed complex, 3 to 15 percent slopes.

50—Urban land-Udorthents, smoothed complex, 3 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Areas along interstate highways, construction zones, industrial areas, railyards, and urban areas (fig. 12)

Map Unit Composition

Note: The Urban land and Udorthents occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Urban land: Typically 50 percent, ranging from about 40 to 60 percent
Udorthents and similar soils: Typically 40 percent, ranging from about 35 to 50 percent

Typical Profile

Urban land

This part of the map unit consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings, and other impervious surfaces.

Udorthents

This part of the map unit consists of disturbed soil and rock material. The disturbance generally results from surface excavations and subsequent deposits of soil and rock material for construction projects. Udorthents have a variable mixture of soil textures and variable soil colors, rock fragment content, depth to bedrock, and drainage. Differential subsidence can occur in Udorthents.

Minor Components

Dissimilar components:
- Berks, Weikert, and Rough soils, which are moderately deep, shallow, and very shallow to shale bedrock, respectively; on hills
- Areas of rock outcrops

Similar components:
- Soils that are covered by less than 20 inches of fill material; in similar areas
- Soils that are on slopes that are less than 3 percent or that range from 15 to 35 percent; in similar areas

Use and Management Considerations

- Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: None assigned
Virginia soil management group: None assigned
Hydric soils: No

51E—Watahala-Frederick complex, 35 to 55 percent slopes, very rocky

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically backslopes; summits and shoulders in some areas
Note: About 2 to 10 percent of the surface is covered with outcrops of limestone bedrock

Map Unit Composition

Note: These Watahala and Frederick soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Watahala and similar soils: Typically 45 percent, ranging from about 35 to 60 percent
Frederick and similar soils: Typically 35 percent, ranging from about 20 to 45 percent

Typical Profile

Watahala

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown very gravelly sandy loam

Subsurface layer:
3 to 12 inches—yellowish brown gravelly silt loam

Subsoil:
12 to 27 inches—yellowish brown gravelly silt loam
27 to 37 inches—yellowish brown gravelly loam
37 to 54 inches—strong brown gravelly clay; light brown mottles
54 to 61 inches—strong brown silty clay; light brown mottles

Frederick

Surface layer:
0 to 3 inches—brown gravelly silt loam

Subsoil:
3 to 8 inches—dark yellowish brown and yellowish brown silt loam
8 to 12 inches—yellowish brown silty clay loam
12 to 20 inches—strong brown silty clay
20 to 72 inches—yellowish red silty clay

Minor Components

Dissimilar components:
- Caneyville and Faywood soils, which are moderately deep to limestone bedrock; on similar landforms
- Oriskany soils, which have more than 35 percent rock fragments throughout; on footslopes
- Soils that are shallow to limestone or chert bedrock; on similar landforms
- Areas that have more than 10 percent percent rock outcrops; on similar landforms
- Areas that have sinkholes; on similar landforms

Similar components:
- Poplimento soils, which have fewer gravel and more clay in the upper part of the subsoil than the Watahala soil and yellower colors than the Frederick soil; on similar landforms
- Murrill soils, which have less clay in the upper part of the subsoil than the Watahala and Frederick soils; on footslopes
- Soils that are deep to limestone or chert bedrock; on similar landforms
- Soils that have stony or extremely stony surfaces; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms
- Areas that have less than 2 percent percent rock outcrops; on similar landforms

Soil Properties and Qualities

Available water capacity: Watahala—moderate (about 6.8 inches); Frederick—moderate (about 8.5 inches)
Slowest saturated hydraulic conductivity: Watahala—moderately high (about 0.2 in/hr); Frederick—moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: Watahala—about 0.1 to 3.0 percent angular stones; Frederick—about 0.1 to 3.0 percent angular stones, 2.0 to 10.0 percent angular cobbles, and 1.0 to 5.0 percent coarse angular gravel
Parent material: Watahala—gravelly residuum over clayey residuum weathered from cherty limestone; Frederick—residuum weathered from limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and chestnut oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high clay content in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of the rock outcrops, rock removal may be needed.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of the rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of the rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: M
Hydric soils: No

52D—Weikert-Berks-Rough complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Note: These Weikert, Berks, and Rough soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Weikert and similar soils: Typically 35 percent, ranging from about 25 to 50 percent
Berks and similar soils: Typically 34 percent, ranging from about 25 to 50 percent
Rough and similar soils: Typically 10 percent, ranging from about 5 to 20 percent

Typical Profile

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Rough

Surface layer:
0 to 1 inch—dark yellowish brown very channery silt loam

Subsoil:
1 to 5 inches—yellowish brown extremely channery silt loam

Substratum:
5 to 7 inches—yellowish brown extremely channery silt loam

Hard bedrock:
7 inches—olive brown shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments throughout than the Weikert, Berks, and Rough soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock and have many rock fragments in the soil that are larger than channers; on footslopes
- Blairton and Wharton soils, which are moderately well drained and have fewer rock fragments than the Weikert, Berks, and Rough soils; on similar landforms
- Ogles soils, which are occasionally flooded; on narrow floodplains
- Soils that are moderately deep to very deep to bedrock and have more clay than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that are very deep to shale bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that have redder subsoils than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Weikert—very low (about 1.6 inches); Berks—very low (about 2.7 inches); Rough—very low (about 0.3 inch)
Slowest saturated hydraulic conductivity: Weikert and Rough—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Weikert—shallow (10 to 20 inches); Berks—moderately deep (20 to 40 inches); Rough—very shallow (less than 10 inches)
Depth to root-restrictive feature: Weikert—10 to 20 inches to bedrock (lithic); Berks—20 to 40 inches to bedrock (lithic); Rough—4 to 10 inches to bedrock (lithic)
Drainage class: Weikert and Berks—well drained; Rough—somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Weikert and Berks—high; Rough—very high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Weikert and Berks—6e; Rough—7e
Virginia soil management group: JJ
Hydric soils: No

52E—Weikert-Berks-Rough complex, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Weikert, Berks, and Rough soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Weikert and similar soils: Typically 40 percent, ranging from about 35 to 50 percent
Berks and similar soils: Typically 30 percent, ranging from about 25 to 35 percent
Rough and similar soils: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Rough

Surface layer:
0 to 1 inch—dark yellowish brown very channery silt loam

Subsoil:
1 to 5 inches—yellowish brown extremely channery silt loam

Substratum:
5 to 7 inches—yellowish brown extremely channery silt loam

Hard bedrock:
7 inches—olive brown shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments throughout than the Weikert, Berks, and Rough soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock and have many rock fragments in the soil that are larger than channers; on footslopes
- Ogles soils, which are occasionally flooded; on narrow floodplains
- Soils that are very deep to shale bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that have redder subsoils than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Weikert—very low (about 1.6 inches); Berks—very low (about 2.7 inches); Rough—very low (about 0.3 inch)

Slowest saturated hydraulic conductivity: Weikert and Rough—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Weikert—shallow (10 to 20 inches); Berks—moderately deep (20 to 40 inches); Rough—very shallow (less than 10 inches)
Depth to root-restrictive feature: Weikert—10 to 20 inches to bedrock (lithic); Berks—20 to 40 inches to bedrock (lithic); Rough—4 to 10 inches to bedrock (lithic)
Drainage class: Weikert and Berks—well drained; Rough—somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Weikert and Berks—high; Rough—very high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

52F—Weikert-Berks-Rough complex, 55 to 80 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Weikert, Berks, and Rough soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Weikert and similar soils: Typically 40 percent, ranging from about 30 to 50 percent
Berks and similar soils: Typically 30 percent, ranging from about 25 to 45 percent
Rough and similar soils: Typically 15 percent, ranging from about 10 to 25 percent

Typical Profile

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Berks

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 11 inches—brown channery silt loam
11 to 22 inches—strong brown very channery silt loam
22 to 27 inches—brown very channery loam

Hard bedrock:
27 inches—shale bedrock

Rough

Surface layer:
0 to 1 inch—dark yellowish brown very channery silt loam

Subsoil:
1 to 5 inches—yellowish brown extremely channery silt loam

Substratum:
5 to 7 inches—yellowish brown extremely channery silt loam

Hard bedrock:
7 inches—olive brown shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments throughout than the Weikert, Berks, and Rough soils; on footslopes
- Oriskany and Macove soils, which are very deep to bedrock and have many rock fragments in the soil that are larger than channers; on footslopes
- Ogles soils, which are occasionally flooded; on narrow floodplains
- Soils that are very deep to shale bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Gilpin soils, which have fewer rock fragments in the subsoil than the Weikert, Berks, and Rough soils; on similar landforms
- Dekalb and Lehew soils, which are moderately deep over hard sandstone bedrock and have sandier textures in the subsoil than the Weikert, Berks, and Rough soils; on similar landforms
- Soils that have nonstony or extremely stony surfaces; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that range from 15 to 35 percent or from 55 to 65 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Weikert—very low (about 1.6 inches); Berks—very low (about 2.7 inches); Rough—very low (about 0.3 inch)
Slowest saturated hydraulic conductivity: Weikert and Rough—high (about 2.0 in/hr); Berks—moderately high (about 0.6 in/hr)
Depth class: Weikert—shallow (10 to 20 inches); Berks—moderately deep (20 to 40 inches); Rough—very shallow (less than 10 inches)
Depth to root-restrictive feature: Weikert—10 to 20 inches to bedrock (lithic); Berks—20 to 40 inches to bedrock (lithic); Rough—4 to 10 inches to bedrock (lithic)
Drainage class: Weikert and Berks—well drained; Rough—somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Weikert and Berks—high; Rough—very high
Surface fragments: About 0.1 to 2.0 percent subangular stones and about 0 to 1.0 percent subangular flagstones
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to northern red oak and eastern white pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

53F—Weikert-Rough complex, 55 to 80 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Typically backslopes; summits and shoulders in some areas

Map Unit Composition

Note: These Weikert and Rough soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Weikert and similar soils: Typically 65 percent, ranging from about 55 to 75 percent
Rough and similar soils: Typically 25 percent, ranging from about 15 to 30 percent

Typical Profile

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Rough

Surface layer:
0 to 1 inch—dark yellowish brown very channery silt loam

Subsoil:
1 to 5 inches—yellowish brown extremely channery silt loam

Substratum:
5 to 7 inches—yellowish brown extremely channery silt loam

Hard bedrock:
7 inches—olive brown shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments throughout than the Weikert and Rough soils; on footslopes
- Ogles soils, which are susceptible to flooding; on floodplains
- Soils that are deep or very deep to shale bedrock; on similar landforms
- Areas of rock outcrop; on similar landforms

Similar components:
- Berks soils, which are moderately deep to shale bedrock; on similar landforms
- Gilpin soils, which are moderately deep to shale bedrock and have fewer rock fragments in the subsoil than the Weikert and Rough soils; on similar landforms
- Soils that have redder subsoils than the Weikert and Rough soils; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Weikert—very low (about 1.6 inches); Rough—very low (about 0.3 inch)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Weikert—shallow (10 to 20 inches); Rough—very shallow (less than 10 inches)
Depth to root-restrictive feature: Weikert—10 to 20 inches to bedrock (lithic); Rough—4 to 10 inches to bedrock (lithic)
Drainage class: Weikert—well drained; Rough—somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Weikert—high; Rough—very high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to eastern white pine

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, these soils are unsuited to conventional septic tank absorption fields.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

54F—Weikert-Rock outcrop-Rough complex

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and mountains
Position on the landform: Weikert and Rough—typically on backslopes and, in some areas, along rivers and streams; Rock outcrops—very steep to near-vertical cliffs
Slope range: Weikert—55 to 90 percent; Rock outcrop—very steep to near vertical; Rough—55 to 100 percent

Map Unit Composition

Note: These Weikert and Rough soils and Rock outcrop occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Weikert and similar soils: Typically 40 percent, ranging from about 25 to 55 percent
Rock outcrop: Typically 25 percent, ranging from about 15 to 40 percent
Rough and similar soils: Typically 20 percent, ranging from about 10 to 35 percent

Typical Profile

Weikert

Organic layer:
0 to 1 inch—slightly decomposed plant material

Surface layer:
1 to 4 inches—dark grayish brown channery silt loam

Subsoil:
4 to 16 inches—yellowish brown very channery silt loam

Hard bedrock:
16 inches—shale bedrock

Rock outcrop

This part of the map unit consists of outcrops of sandstone and shale bedrock. The outcrops may be about 100 feet high, and some occur as near-vertical cliffs.

Rough

Surface layer:
0 to 1 inch—dark yellowish brown very channery silt loam

Subsoil:
1 to 5 inches—yellowish brown extremely channery silt loam

Substratum:
5 to 7 inches—yellowish brown extremely channery silt loam

Hard bedrock:
7 inches—olive brown shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and have fewer rock fragments throughout than the Weikert soil; on footslopes

Similar components:
- Berks soils, which are moderately deep to shale bedrock; on similar landforms
- Soils that have a redder subsoil than the Weikert soil; on similar landforms
- Soils that are on slopes that range from 35 to 55 percent; on similar landforms

Properties and Qualities of the Weikert and Rough Soils

Available water capacity: Weikert—very low (about 1.6 inches); Rough—very low (about 0.3 inch)
Slowest saturated hydraulic conductivity: High (about 2.0 in/hr)
Depth class: Weikert—shallow (10 to 20 inches); Rough—very shallow (less than 10 inches)
Depth to root-restrictive feature: Weikert—10 to 20 inches to bedrock (lithic); Rough—4 to 10 inches to bedrock (lithic)
Drainage class: Weikert—well drained; Rough—somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Weikert—high; Rough—very high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

- Because of the proximity to steep bluffs, areas of this map unit are not recommended for conventional timber management.

Building sites

- Because of the proximity to steep bluffs, areas of this map unit are not recommended for building sites.

Septic tank absorption fields

- Because of the proximity to steep bluffs, areas of this map unit are not recommended for septic tank absorption fields.

Local roads and streets

- Because of the proximity to steep bluffs, areas of this map unit are not recommended for local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Weikert and Rough—7s; Rock outcrop—none assigned
Virginia soil management group: Weikert and Rough—JJ; Rock outcrop—none assigned
Hydric soils: No

55C—Wharton-Blairton complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Typically summits, shoulders, and footslopes; backslopes in some areas

Map Unit Composition

Note: These Wharton and Blairton soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Wharton and similar soils: Typically 55 percent, ranging from about 35 to 75 percent
Blairton and similar soils: Typically 40 percent, ranging from about 20 to 55 percent

Typical Profile

Wharton

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown silt loam

Subsoil:
3 to 8 inches—very dark grayish brown and yellowish brown silt loam
8 to 21 inches—yellowish brown silty clay loam

21 to 37 inches—yellowish brown silty clay loam; strong brown masses of oxidized iron and light brownish gray and light gray iron depletions
37 to 44 inches—yellowish brown silty clay loam; strong brown masses of oxidized iron and light brownish gray iron depletions
44 to 62 inches—gray silty clay loam; strong brown masses of oxidized iron

Blairton

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 4 inches—very dark grayish brown silt loam

Subsoil:
4 to 9 inches—dark yellowish brown silt loam; dark yellowish brown mottles
9 to 18 inches—brown silty clay loam; dark yellowish brown masses of oxidized iron
18 to 27 inches—yellowish brown silty clay loam; dark yellowish brown masses of oxidized iron and gray iron depletions
27 to 31 inches—light brownish gray silty clay loam; yellowish red masses of oxidized iron
31 to 38 inches—dark grayish brown very channery silt loam; dark yellowish brown masses of oxidized iron and grayish brown iron depletions

Hard bedrock:
38 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and well drained; on footslopes
- McClung and Lily soils, which are very deep and moderately deep to sandstone bedrock, respectively, and are well drained; on similar landforms
- Rough soils, which are very shallow to shale bedrock and somewhat excessively drained; on similar landforms
- Dekalb soils, which are moderately deep to sandstone bedrock, are excessively drained, and have more rock fragments throughout than the Wharton and Blairton soils; on similar landforms
- Berks soils, which are well drained and have more rock fragments throughout than the Wharton and Blairton soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock and well drained; on similar landforms
- Gilpin soils, which are well drained; on similar landforms

Similar components:
- Soils that have more clay in the upper part of the subsoil than the Wharton and Blairton soils; on similar landforms
- Soils that are on slopes that range from 3 to 8 percent or from 15 to 35 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Wharton—moderate (about 8.9 inches); Blairton—low (about 5.9 inches)
Slowest saturated hydraulic conductivity: Wharton—moderately low (about 0.06 in/hr); Blairton—moderately high (about 0.2 in/hr)
Depth class: Wharton—very deep (more than 60 inches); Blairton—moderately deep (20 to 40 inches)

Depth to root-restrictive feature: Wharton—40 to 72 inches to bedrock (paralithic); Blairton—20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Depth to seasonal water saturation: Wharton—about 18 to 36 inches; Blairton—about 6 to 36 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Wharton—moderate; Blairton—low
Runoff class: Wharton—medium; Blairton—high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: AA
Hydric soils: No

55D—Wharton-Blairton complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, footslopes, and backslopes

Map Unit Composition

Note: These Wharton and Blairton soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Wharton and similar soils: Typically 55 percent, ranging from about 35 to 75 percent
Blairton and similar soils: Typically 40 percent, ranging from about 20 to 55 percent

Typical Profile

Wharton

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 3 inches—very dark grayish brown silt loam

Subsoil:
3 to 8 inches—very dark grayish brown and yellowish brown silt loam
8 to 21 inches—yellowish brown silty clay loam
21 to 37 inches—yellowish brown silty clay loam; strong brown masses of oxidized iron and light brownish gray and light gray iron depletions
37 to 44 inches—yellowish brown silty clay loam; strong brown masses of oxidized iron and light brownish gray iron depletions
44 to 62 inches—gray silty clay loam; strong brown masses of oxidized iron

Blairton

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 4 inches—very dark grayish brown silt loam

Subsoil:
4 to 9 inches—dark yellowish brown silt loam; dark yellowish brown mottles
9 to 18 inches—brown silty clay loam; dark yellowish brown masses of oxidized iron
18 to 27 inches—yellowish brown silty clay loam; dark yellowish brown masses of oxidized iron and gray iron depletions

27 to 31 inches—light brownish gray silty clay loam; yellowish red masses of oxidized iron
31 to 38 inches—dark grayish brown very channery silt loam; dark yellowish brown masses of oxidized iron and grayish brown iron depletions

Hard bedrock:
38 inches—shale bedrock

Minor Components

Dissimilar components:
- Shelocta soils, which are very deep to bedrock and well drained; on footslopes
- McClung and Lily soils, which are very deep and moderately deep to sandstone bedrock, respectively, and are well drained; on similar landforms
- Rough soils, which are very shallow to shale bedrock and somewhat excessively drained; on similar landforms
- Dekalb soils, which are moderately deep to sandstone bedrock, are excessively drained, and have more rock fragments throughout than the Wharton and Blairton soils; on similar landforms
- Berks soils, which are well drained and have more rock fragments throughout than the Wharton and Blairton soils; on similar landforms
- Weikert soils, which are shallow to shale bedrock and well drained; on similar landforms
- Gilpin soils, which are well drained; on similar landforms

Similar components:
- Soils that have more clay in the upper part of the subsoil than the Wharton and Blairton soils; on similar landforms
- Soils that are on slopes that range from 8 to 15 percent or from 35 to 55 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: Wharton—moderate (about 8.9 inches); Blairton—low (about 5.9 inches)
Slowest saturated hydraulic conductivity: Wharton—moderately low (about 0.06 in/hr); Blairton—moderately high (about 0.2 in/hr)
Depth class: Wharton—very deep (more than 60 inches); Blairton—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Wharton—40 to 72 inches to bedrock (paralithic); Blairton—20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Depth to seasonal water saturation: Wharton—about 18 to 36 inches; Blairton—about 6 to 36 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Wharton—moderate; Blairon—low
Runoff class: Wharton—high; Blairton—very high
Surface fragments: None
Parent material: Residuum weathered from shale and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: AA
Hydric soils: No

56A—Wolfgap loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Low to intermediate level floodplains in a river valley
Position on the landform: Floodplain steps

Map Unit Composition

Wolfgap and similar soils: Typically 95 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 11 inches—very dark grayish brown loam

Subsurface layer:
11 to 18 inches—dark brown loam

Subsoil:
18 to 60 inches—dark yellowish brown loam

Minor Components

Dissimilar components:
- Alonzville soils, which are well drained; on stream terraces
- Coursey soils, which are moderately well drained and have a dark colored surface layer less than 6 inches thick; on stream terraces
- Ogles soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are protected from flooding; on similar landforms

Similar components:
- Gladehill soils, which have less clay in the subsoil than the Wolfgap soil; on similar landforms
- Soils that have a dark colored surface layer more than 24 inches thick; on similar landforms
- Soils that are more acid than the Wolfgap soil; on similar landforms
- Soils that flood frequently or rarely; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 11.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Moderately suited to yellow-poplar
- Flooding may damage haul roads and restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- Because of the flooding, this soil is unsuited to building site development.

Septic tank absorption fields

- Because of the flooding, this soil is unsuited to septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

57A—Wolfgap loam, 0 to 3 percent slopes, protected

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Floodplains in a river valley (fig. 13)
Position on the landform: Floodplain steps
Note: This soil occurs in landform positions that are subject to flooding under natural conditions but that are currently protected from flooding due to a water-control structure located upstream

Map Unit Composition

Wolfgap and similar soils: Typically 95 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 11 inches—very dark grayish brown loam

Subsurface layer:
11 to 18 inches—dark brown loam

Subsoil:
18 to 60 inches—dark yellowish brown loam

Figure 13.—A grassed ballpark in Covington in an area of Wolfgap loam, 0 to 3 percent slopes, protected. This soil is suitable for recreational uses.

Minor Components

Dissimilar components:
- Alonzville soils, which are well drained; on stream terraces
- Coursey soils, which are moderately well drained and have a dark colored surface layer less than 6 inches thick; on stream terraces
- Ogles soils, which have more than 35 percent rock fragments throughout; on similar landforms
- Soils that are subject to flooding; on similar landforms

Similar components:
- Gladehill soils, which have less clay in the subsoil than the Wolfgap soil; on similar landforms
- Soils that have a dark colored surface layer more than 24 inches thick; on similar landforms
- Soils that are more acid than the Wolfgap soil; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 11.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.6 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is well suited to cropland.

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Moderately suited to yellow-poplar
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

58B—Zoar silt loam, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley
Position on the landform: Treads and risers

Map Unit Composition

Zoar and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 15 inches—light yellowish brown silt loam
15 to 29 inches—light yellowish brown silty clay loam
29 to 37 inches—pale brown and light yellowish brown silty clay loam; brownish yellow masses of oxidized iron and light brownish gray iron depletions
37 to 42 inches—brownish yellow silty clay loam; light brownish gray iron depletions
42 to 50 inches—light brownish gray silty clay loam; yellowish brown and brownish yellow masses of oxidized iron

Substratum:
50 to 60 inches—light yellowish brown and brownish yellow silty clay loam; light brownish gray iron depletions and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained; on similar landforms
- Cottonbend and Sugarhol soils, which are well drained; on similar landforms
- Soils that are poorly drained and have less clay than the Zoar soil; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the upper part of the subsoil; on similar landforms

Similar components:
- Nicelytown soils, which have less clay in the upper part of the subsoil than the Zoar soil; on similar landforms
- Soils that have 3 to 15 percent rock fragments in the upper part of the subsoil; on similar landforms
- Soils that have more than 35 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that have iron depletions at a depth between 30 and 60 inches or 10 and 18 inches; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms

Soil Properties and Qualities

Available water capacity: High (about 9.5 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to eastern white pine
- Soil wetness may limit the use of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: K
Hydric soil: No

59B—Zoar-Urban land complex, 3 to 8 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: High stream terraces in a river valley and areas on hills
Position on the landform: Treads, footslopes, and toeslopes

Map Unit Composition

Note: The Zoar soil and Urban land occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Zoar and similar soils: Typically 45 percent, ranging from about 30 to 60 percent
Urban land: Typically 40 percent, ranging from about 25 to 50 percent

Typical Profile

Zoar

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 15 inches—light yellowish brown silt loam
15 to 29 inches—light yellowish brown silty clay loam

29 to 37 inches—pale brown and light yellowish brown silty clay loam; brownish yellow masses of oxidized iron and light brownish gray iron depletions
37 to 42 inches—brownish yellow silty clay loam; light brownish gray iron depletions
42 to 50 inches—light brownish gray silty clay loam; yellowish brown and brownish yellow masses of oxidized iron

Substratum:
50 to 60 inches—light yellowish brown and brownish yellow silty clay loam; light brownish gray iron depletions and yellowish brown masses of oxidized iron

Urban land

This part of the map unit consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings, and other impervious surfaces.

Minor Components

Dissimilar components:
- Purdy soils, which are poorly drained; on similar landforms
- Cottonbend and Sugarhol soils, which are well drained; on similar landforms
- Soils that are poorly drained and have less clay than the Zoar soil; on similar landforms
- Soils that have 15 to 35 percent rock fragments in the upper part of the subsoil; on similar landforms

Similar components:
- Nicelytown soils, which have less clay in the upper part of the subsoil than the Zoar soil; on similar landforms
- Soils that have 3 to 15 percent rock fragments in the upper part of the subsoil; on similar landforms
- Soils that have more than 35 percent rock fragments in the lower part of the subsoil; on similar landforms
- Soils that have iron depletions between a depth of 30 and 60 inches or 10 and 18 inches; on similar landforms
- Soils that are deep to shale bedrock; on similar landforms
- Soils that are on slopes that are less than 3 percent or that range from 8 to 15 percent; on similar landforms
- Soils that are covered with fill material; on similar landforms

Properties and Qualities of the Zoar Soil

Available water capacity: High (about 9.5 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to eastern white pine
- Soil wetness may limit the use of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings and may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of the Zoar soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Zoar—2e; Urban land—none assigned
Virginia soil management group: Zoar—K; Urban land—none assigned
Hydric soils: No

W—Water

Setting

This map unit is in the Southern Appalachian Ridges and Valleys major land resource area. It includes ponds, lakes, creeks, rivers, and reservoirs.

This map unit is not assigned any interpretive groups.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed. The system of land capability classification used by the Natural Resources Conservation Service and the Virginia Agronomic Land Use Evaluation System are explained. Prime farmland is also discussed.

Effective pasture management practices include maintaining a mixture of grasses and legumes, rotating pasture, deferring grazing, controlling undesirable vegetation, and using proper stocking rates.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification and the Virginia Soil Management Group of map units in the survey area also are shown in the table.

The yields are based VALUES—the Virginia Agronomic Land Use Evaluation System *(25)*. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Realistic yield goals can be maintained over a long-term basis through proper nutrient management and other soil amendments such as lime. Applications of nitrogen and phosphorus from organic and inorganic forms should be done according to approved nutrient management practices and regulations.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension

Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit *(21)*. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system that ranks soils for management and productivity *(25)*. VALUES places each soil series in

Virginia into one of 43 management groups. The format of the management groups, A through QQ, include the following soil characteristics—regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features, such as texture; available water capacity; and internal drainage. Yields that are both economically and environmentally feasible were assigned to each management group, based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in Alleghany County.

Group A. The soils in this group formed in alluvial parent materials and are on gently sloping floodplains or stream terraces which have watersheds that originate west of the Blue Ridge. These soils are deep or very deep and are medium textured throughout. They have a high available water capacity and are well drained.

Group E. The soils of this group formed in sandy sediments on low-lying terraces, in depressions, or on flats where surface drainage is restricted. These soils are deep and very deep and have coarse-loamy textures throughout. They commonly have a high water table even during some parts of the growing season and therefore have a high available water capacity. These soils are poorly drained.

Group G. The soils of this group formed in locally transported, medium textured sediments of either colluvial or alluvial origin that overlie a wide range of residual materials. These soils are in landscape positions that include footslopes and toeslopes, the heads of drainageways, depressions, and narrow upland drainageways. These deep and very deep soils are silty to loamy in the upper part of the subsoil, which is underlain with clayey to stony materials. They have a moderately high available water capacity and are moderately well drained or somewhat poorly drained.

Group H. The soils of this group formed in alluvium along streams or terraces. They are moderately deep to very deep, have silty to clay loam subsurface layers, and have a moderately high available water capacity. They are somewhat poorly drained or poorly drained, unless artificial drainage is provided. If artificial drainage is provided, the productive capacity of these soils is significantly increased.

Group K. The soils of this group formed in mixed sediments on landscapes that range from stream terraces to broad, nearly level interfluves on uplands. These soils are deep or very deep, have loamy surface layers, and have clay loam or clayey subsurface layers. They have a moderate available water capacity and are somewhat poorly drained.

Group L. The soils of this group formed from old transported deposits of alluvium or colluvium. These soils are common on stream terraces, footslopes, and older, elevated, upland landscapes that were once stream terraces. They are deep or very deep, have medium textured surface layers, have more clayey subsurface layers, and commonly contain gravel and rounded stones. They have a moderate or high available water capacity and typically are well drained.

Group M. The soils of this group formed in material weathered from carbonate rocks. These soils are on upland summits and side slopes. These deep or very deep soils have reddish brown clayey subsurface layers that contain coarse fragments in some areas. They have a moderate available water capacity, unless the content of coarse fragments is significantly high, and they are well drained.

Group O. The soils of this group formed from transported materials ranging from mountain colluvium to old alluvium on dissected uplands and deposits on old elevated river terraces. These very deep to shallow soils have very dark red clayey subsurface layers, which have significant amounts of coarse fragments in some areas; have a moderate available water capacity; and are well drained.

Group U. The soils of this group formed from a variety of residual parent materials ranging from Triassic sediments to sandstone, shale, and limestone to colluvium from these materials. These moderately deep to shallow soils commonly have fine-loamy subsurface layers. They commonly have coarse fragments making up one-third of the

soil volume and, as a result, have a moderate or moderately low available water capacity. They are well drained or moderately well drained.

Group Y. The soils of this group formed from the residuum of weathered limestone, shale, or other carbonate-influenced rocks. These shallow to moderately deep soils represent upland landscapes. They have clayey subsurface layers, which contain coarse fragments in some areas, and have a moderate or low available water capacity where they are shallow to bedrock. They are mostly well drained.

Group AA. The soils in this group formed in a variety of sediments. These soils are very deep to shallow and are on uplands. They have clayey subsurface layers, which contain coarse fragments in some areas, and therefore have a moderately low available water capacity. The soils are somewhat poorly drained or moderately well drained.

Group CC. The soils of this group formed from a range of parent materials that include alluvium and colluvium. These soils occur on a variety of landscapes, including uplands, stream terraces, colluvial areas, and bottomlands. They commonly have a moderately deep solum, are very deep to bedrock, have clayey-skeletal to coarse-loamy subsurface layers (which have as much as 70 percent coarse fragments in some areas), and have a moderately low available water capacity. They are well drained.

Group FF. The soils of this group formed in sandstone and shale residual parent materials and mountain colluvium. These soils are on steeply dissected uplands and mountain side slopes. They are moderately shallow and mostly have loamy-skeletal subsurface layers, which may contain 80 percent, or more, coarse fragments. As a result, the available water capacity is low or very low. The soils are well drained or moderately well drained.

Group JJ. The soils of this group formed from a wide variety of residual parent materials, ranging from sandstone, shale, and limestone to phyllite or schist. These soils are shallow to moderately deep, are dominantly loamy-skeletal throughout, and contain 30 to 70 percent coarse fragments. This group includes some very deep soils if the natural soil porosity has been disturbed. The soils of this group have a very low available water capacity and are well drained.

Group NN. The soils of this group are undrained. These soils formed in alluvium along streams or on terraces. They are moderately deep to very deep, have silty to clay loam subsurface layers, have a moderately high available water capacity, and are somewhat poorly drained or poorly drained.

The management groups for the map units in the survey area are given in the section “Detailed Soil Map Units” and in table 5.

Prime Farmland

Table 6 lists the map units in the survey area that are considered prime farmland. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed,

forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 13,914 acres in the survey area, or nearly 5 percent of the total acreage, meets the requirements for prime farmland. This land is mainly in colluvial areas or on the floodplains of creeks and rivers.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

For some of the soils listed in table 6, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

Hydric Soils

This section lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(8, 11)*.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology *(5, 11, 14, 15)*. Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part *(6)*. These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established *(7)*. These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” *(20)* and “Keys to Soil Taxonomy” *(19)* and in the “Soil Survey Manual” *(22)*.

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite

determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” *(8)*.

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This information can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(8, 11)*.

21A Dunning silt loam, 0 to 3 percent slopes, occasionally flooded
46A Purdy silty clay loam, 0 to 3 percent slopes

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hyric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

11B Cottonbend silt loam, 3 to 8 percent slopes
11C Cottonbend silt loam, 8 to 15 percent slopes
12B Cottonbend-Urban land complex, 3 to 8 percent slopes
12C Cottonbend-Urban land complex, 8 to 15 percent slopes
13A Coursey silt loam, 0 to 3 percent slopes, rarely flooded
14B Coursey-Ogles-Shelocta complex
22B Escatawba loam, 3 to 8 percent slopes, very stony
22C Escatawba loam, 8 to 15 percent slopes, very stony
36A Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded
40B Nicelytown silt loam, 3 to 8 percent slopes
40C Nicelytown silt loam, 8 to 15 percent slopes
48B Sugarhol silt loam, 3 to 8 percent slopes
48C Sugarhol silt loam, 8 to 15 percent slopes
58B Zoar silt loam, 3 to 8 percent slopes
59B Zoar-Urban land complex, 3 to 8 percent slopes

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 7, parts I through III, show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from

facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the

material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly

exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual” *(17)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In table 9, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, schedule of activities, and Best Management Practices (BMPs) for each activity. Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual” *(17)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreational Development

In table 10, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil

properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in

determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence,

linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good

performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise

stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, part I, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 13, part II, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable

material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Soil Properties

Table 15 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(3)* and the system adopted by the American Association of State Highway and Transportation Officials *(2)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical Soil Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil

properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting

their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook" *(18)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Soil Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have a pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist

chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top *(upper limit)* and base *(lower limit)* of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the

relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(19, 20)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in

the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(22)* and in the “Field Book for Describing and Sampling Soils” *(13)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(20)* and in “Keys to Soil Taxonomy” *(19)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Alonzville Series

Physiographic province: Valley and Ridge
Landform: Low stream terraces in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Coursey soils, which are moderately well drained; on similar landforms
- Gladehill soils, which have a coarse-loamy particle size and a mollic epipedon; on floodplains
- Ogles soils, which have a loamy-skeletal particle size; on floodplains
- Wolfgap soils, which have a mollic epipedon; on floodplains

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Alonzville loam, 0 to 3 percent slopes, rarely flooded; Alleghany County, Virginia; approximately 9,350 feet south and 30 degrees west of the intersection of Highways VA-159 and VA-665, in the area of Peters Mountain, in pasture; Callaghan, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 45 minutes 56 seconds N. and long. 80 degrees 7 minutes 4 seconds W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; common very fine and fine roots; 12 percent rounded sandstone gravel; strongly acid; clear smooth boundary.

BA—5 to 15 inches; brown (10YR 4/3) loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; 12 percent rounded sandstone gravel; strongly acid; gradual smooth boundary.

Bt1—15 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; strong medium subangular blocky structure; very friable; few very fine and fine roots; many distinct clay films on all faces of peds; 3 percent rounded sandstone gravel; strongly acid; diffuse smooth boundary.

Bt2—44 to 55 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; very friable; few very fine and fine roots; common faint clay films on all faces of peds; 12 percent rounded sandstone gravel; strongly acid; gradual smooth boundary.

BC—55 to 65 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; 30 percent rounded sandstone gravel; strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more

Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

Ap horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 15 percent gravel

AB, BA, or BE horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, silt loam, or fine sandy loam
Rock fragments—0 to 15 percent gravel

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 8
Texture (in the fine-earth fraction)—clay loam, silty clay loam, silt loam, or loam
Rock fragments—0 to 15 percent gravel

BC horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam, clay loam, or sandy clay loam
Rock fragments—0 to 35 percent gravel

C horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture (in the fine-earth fraction)—fine sandy loam, clay loam, or loam
Rock fragments—0 to 35 percent gravel

Alticrest Series

Physiographic province: Valley and Ridge
Landform: Mountains
Parent material: Residuum weathered from sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 8 to 55 percent

Associated Soils

- Dekalb soils, which have a loamy-skeletal particle size; on similar landforms
- Lily soils, which have a fine-loamy particle size; on similar landforms

Taxonomic Classification

Coarse-loamy, siliceous, semiactive, mesic Typic Dystrudepts

Typical Pedon

Alticrest channery sandy loam in an area of Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony; Alleghany County, Virginia; approximately 2,900 feet south and 89 degrees west of the intersection of U.S. Forest Service Road 125 and U.S. Forest Service Road 125D, near the summit of Piney Ridge, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 49 minutes 58 seconds N. and long. 79 degrees 54 minutes 18 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A1—1 to 2 inches; very dark grayish brown (10YR 3/2) channery sandy loam; weak fine granular structure; very friable; many very fine and fine and common medium roots; 15 percent sandstone channers; extremely acid; clear smooth boundary.
A2—2 to 4 inches; dark yellowish brown (10YR 4/4) channery sandy loam; weak fine granular structure; very friable; many very fine and fine and common medium roots; 15 percent sandstone channers; extremely acid; clear smooth boundary.
Bw1—4 to 12 inches; dark yellowish brown (10YR 4/6) channery sandy loam; weak fine subangular blocky structure; very friable; common very fine, fine, and medium roots; 17 percent sandstone channers; very strongly acid; gradual smooth boundary.
Bw2—12 to 26 inches; yellowish brown (10YR 5/6) channery sandy loam; weak fine subangular blocky structure; very friable; common very fine, fine, and medium roots; 25 percent sandstone channers; very strongly acid; gradual smooth boundary.
Bw3—26 to 30 inches; strong brown (7.5YR 5/6) channery sandy loam; common fine and medium red (2.5YR 4/6) mottles; weak fine subangular blocky structure; very friable; common very fine, fine, and medium roots; 28 percent sandstone channers; very strongly acid; abrupt smooth boundary.
R—30 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—loam
Rock fragments—15 to 35 percent channers

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture (in the fine-earth fraction)—sandy loam or fine sandy loam
Rock fragments—15 to 35 percent channers

Bw horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—15 to 35 percent channers

Berks Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Residuum weathered from shale and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 8 to 80 percent

Associated Soils

- Gilpin soils, which have a fine-loamy particle size and an argillic horizon; on hills
- Lehew soils, which have more sand than the Berks soils; on mountains in areas of sandstone bedrock
- Macove soils, which are very deep; at the base of slopes in colluvial areas
- Rough soils, which are very shallow and somewhat excessively drained; on mountains
- Shelocta soils, which are very deep and have a fine-loamy particle-size; on footslopes, on toeslopes, and along drainageways in valleys in colluvial areas
- Weikert soils, which are shallow; on similar landforms

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Berks channery silt loam in an area of Weikert-Berks-Rough complex, 35 to 55 percent slopes; Alleghany County, Virginia; approximately 7,100 feet north and 12 degrees east of the intersection of Highway VA-629 and Highway I-64, near Wilson Creek, in woodland; Clifton Forge, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 50 minutes 43 seconds N. and long. 79 degrees 47 minutes 17 seconds W.

Oi—0 to 1 inch; slightly decomposed plant material.
A—1 to 4 inches; dark grayish brown (10YR 4/2) channery silt loam; weak fine granular structure; friable; many fine and medium and common coarse roots; 30 percent shale channers; strongly acid; clear smooth boundary.
Bw1—4 to 11 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; friable; many fine, common medium, and few coarse roots; 30 percent shale channers; strongly acid; gradual wavy boundary.
Bw2—11 to 22 inches; strong brown (7.5YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; common fine and few medium and coarse roots; 40 percent shale channers; strongly acid; gradual wavy boundary.
BC—22 to 27 inches; brown (7.5YR 5/4) very channery loam; weak fine subangular blocky structure; friable; few fine roots; 50 percent shale channers; strongly acid; gradual wavy boundary.
R—27 inches; shale bedrock.

Range in Characteristics

Solum thickness: 12 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to slightly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4

Texture (in the fine-earth fraction)—silt loam
Rock fragments—15 to 35 percent channers

Bw horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture (in the fine-earth fraction)—silt loam, loam, or silty clay loam
Rock fragments—15 to 75 percent channers; average of more than 35 percent in the particle-size control section

BC horizon and C horizon (if it occurs):
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—35 to 90 percent channers

Blairton Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from shale and siltstone
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 8 to 35 percent

Associated Soils

- Berks soils, which are well drained and have a loamy-skeletal particle size; on similar landforms
- Gilpin soils, which are well drained; on similar landforms
- Shelocta soils, which are very deep and well drained; on footslopes, on toeslopes, and along drainageways in colluvial areas
- Wharton soils, which are deep or very deep; on similar landforms

Taxonomic Classification

Fine-loamy, mixed, active, mesic Aquic Hapludults

Typical Pedon

Blairton silt loam in an area of Wharton-Blairton complex, 15 to 35 percent slopes; Alleghany County, Virginia; approximately 3,800 feet south and 46 degrees west of the intersection of Highway US-220 and Highway US-60, west of the Jackson River, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 46 minutes 31 seconds N. and long. 79 degrees 59 minutes 44 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A—1 to 4 inches; very dark grayish brown (10YR 3/2) silt loam; strong medium granular structure; very friable; many fine and medium and few coarse roots; very strongly acid; clear smooth boundary.
BA—4 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; many fine faint dark yellowish brown (10YR 4/6) mottles; moderate medium subangular blocky structure; very friable; common fine, medium, and coarse roots; streaks of pale brown (10YR 6/3) soft weathered shale; 2 percent shale channers; very strongly acid; clear wavy boundary.

Bt1—9 to 18 inches; brown (10YR 4/3) silty clay loam; weak medium platy structure; very friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots; few faint clay films on all faces of peds; common fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron; streaks of pale brown (10YR 6/3) soft weathered shale; 2 percent shale channers; very strongly acid; clear smooth boundary.

Bt2—18 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine platy structure; very friable, slightly sticky, moderately plastic; common fine and medium roots; few faint clay films on all faces of peds; many fine and medium faint dark yellowish brown (10YR 4/6) masses of oxidized iron and many medium and coarse prominent gray (10YR 6/1) iron depletions; streaks of dark grayish brown (10YR 4/2) soft weathered shale; 5 percent shale channers; very strongly acid; gradual smooth boundary.

Btg—27 to 31 inches; light brownish gray (10YR 6/2) silty clay loam; weak fine platy structure; very friable, slightly sticky, moderately plastic; few very fine and fine roots; few faint clay films on all faces of peds; many medium prominent yellowish red (5YR 4/6) masses of oxidized iron; streaks of light brown (7.5YR 6/4) soft weathered shale; 5 percent shale channers; very strongly acid; clear smooth boundary.

BCg—31 to 38 inches; dark grayish brown (10YR 4/2) very channery silt loam; weak fine platy structure; friable; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron and many fine faint grayish brown (10YR 5/2) iron depletions; 40 percent shale channers; very strongly acid; abrupt smooth boundary.

R—38 inches; fissle shale bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid or very strongly acid (in unlimed areas)

A or Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent channers

E, BA, or BE horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent channers

Bt and Btg horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture (in the fine-earth fraction)—silt loam or silty clay loam
Rock fragments—0 to 20 percent channers

BC or C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6

Texture (in the fine-earth fraction)—silt loam, silty clay loam, or silty clay
Rock fragments—15 to 50 percent channers

Caneyville Series

Physiographic province: Valley and Ridge
Landform: Hills; some areas have karst topography
Parent material: Residuum weathered from limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Moderately deep
Slope range: 8 to 80 percent

Associated Soils

- Faywood soils, which have browner colors than the Caneyville soils; on similar landforms in areas of limestone and shale bedrock
- Frederick soils, which are very deep; on similar landforms
- Murrill soils, which are very deep; on footslopes and toeslopes in areas of colluvium over limestone residuum
- Poplimento soils, which are very deep; on similar landforms in residuum weathered from limestone and shale
- Watahala soils, which are very deep and have a fine-loamy over clayey particle size; on similar landforms in gravelly residuum over clayey residuum weathered from cherty limestone

Taxonomic Classification

Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Caneyville silt loam, karst, 15 to 35 percent slopes, very rocky; Alleghany County, Virginia; approximately 8,300 feet north and 87 degrees east of the intersection of Highway US-220 and Highway VA-640, west of Falling Spring Creek, in pasture; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 52 minutes 7 seconds N. and long. 79 degrees 54 minutes 45 seconds W.

Ap1—0 to 4 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable; many very fine and fine roots; moderately acid; clear smooth boundary.

Ap2—4 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; moderately acid; clear smooth boundary.

Bt1—10 to 16 inches; strong brown (7.5YR 4/6) silty clay; common fine distinct yellowish brown (10YR 5/6) mottles; strong medium subangular blocky structure; friable, very sticky, very plastic; few very fine and fine roots; many distinct clay films on all faces of peds; slightly acid; gradual smooth boundary.

Bt2—16 to 22 inches; yellowish red (5YR 4/6) clay; strong medium subangular blocky structure; firm, very sticky, very plastic; few very fine and fine roots; many distinct clay films on all faces of peds; few fine dark brown (7.5YR 3/2) iron-manganese masses on faces of peds; slightly acid; gradual smooth boundary.

Bt3—22 to 29 inches; yellowish red (5YR 4/6) clay; many fine and medium prominent yellowish brown (10YR 5/6) mottles; strong medium subangular blocky structure; firm, very sticky, very plastic; few very fine and fine roots; many distinct clay films

on all faces of peds; 10 percent limestone gravel; neutral; abrupt irregular boundary.
R—29 inches; limestone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Very strongly acid to neutral in the A and BE horizons and in the upper part of the Bt horizon; moderately acid to neutral in the lower part of the Bt horizon (in unlimed areas)

Ap horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 10 percent gravel and cobbles

A horizon (if it occurs):
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—0 to 10 percent gravel and cobbles

BA horizon (if it occurs):
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—silt loam, loam, or silty clay loam
Rock fragments—0 to 10 percent gravel and cobbles

Bt horizon:
Hue—10YR to 2.5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—clay, silty clay, or silty clay loam
Rock fragments—0 to 15 percent gravel and cobbles

Cottonbend Series

Physiographic province: Valley and Ridge
Landform: High stream terraces in river valleys
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 15 percent

Associated Soils

- Nicelytown soils, which are moderately well drained; on similar landforms
- Purdy soils, which are poorly drained and have a fine particle size; on similar landforms
- Sugarhol soils, which have a fine particle size; on similar landforms
- Zoar soils, which are moderately well drained and have a fine particle size; on similar landforms

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Paleudults

Typical Pedon

Cottonbend silt loam, 3 to 8 percent slopes; Alleghany County, Virginia; approximately 750 feet south and 62 degrees west of the intersection of Highway VA-18 and Highway VA-616, northeast of Jordan Mines, in a corn field; Jordan Mines, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 39 minutes 59 seconds N. and long. 80 degrees 6 minutes 54 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; common very fine and fine roots; 2 percent cobbles and 10 percent gravel; strongly acid; clear smooth boundary.
BE—8 to 17 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; 12 percent gravel; strongly acid; gradual smooth boundary.
Bt1—17 to 32 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; few faint clay films on all faces of peds; 3 percent gravel; strongly acid; diffuse smooth boundary.
Bt2—32 to 52 inches; strong brown (7.5YR 4/6) loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; few faint clay films on all faces of peds; 5 percent gravel; strongly acid; diffuse smooth boundary.
BC—52 to 72 inches; strong brown (7.5YR 4/6) gravelly loam; weak medium subangular blocky structure; very friable; few very fine and fine roots; 8 percent cobbles and 25 percent gravel; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 72 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent gravel and cobbles

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 15 percent gravel and cobbles

E, EB, or BE horizon (if it occurs):
Hue—10YR or 7.5YR
Value—5 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—fine sandy loam, loam, or silt loam
Rock fragments—0 to 15 percent gravel and cobbles

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8

Texture (in the fine-earth fraction)—clay loam, loam, sandy clay loam, or silty clay loam above a depth of 40 inches and clay loam, loam, sandy clay loam, or clay below a depth of 40 inches
Rock fragments—0 to 15 percent gravel and cobbles in the upper part of the horizon and 0 to 40 percent gravel and cobbles in the lower part

BC horizon:
Hue—10YR to 5YR
Value—4 or 5
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, clay loam, sandy clay loam, or clay
Rock fragments—0 to 40 percent gravel and cobbles

Coursey Series

Physiographic province: Valley and Ridge
Landform: Low stream terraces in river valleys
Parent material: Alluvium derived from sandstone and shale
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 8 percent

Associated Soils

- Alonzville soils, which are well drained; on similar landforms
- Gladehill soils, which are well drained, have a coarse-loamy particle size, and have a mollic epipedon; on floodplains
- Ogles soils, which are well drained and have a loamy-skeletal particle size; on floodplains
- Purdy soils, which are poorly drained and have a fine particle size; on similar landforms
- Shelocta soils, which are well drained; on footslopes, toeslopes, and along drainageways in colluvium derived from shale and siltstone
- Wolfgap soils, which are well drained and have a mollic epipedon; on floodplains

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Aquic Hapludults

Typical Pedon

Coursey silt loam, 0 to 3 percent slopes, rarely flooded; Alleghany County, Virginia; approximately 4,300 feet north and 82 degrees east of the intersection of Highway VA-42 and U.S. Forest Service Road 100, along the Cowpasture River, in woodland; Longdale Furnace, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 51 minutes 31 seconds N. and long. 79 degrees 43 minutes 56 seconds W.

A—0 to 5 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable; many fine and medium and common coarse roots; strongly acid; gradual smooth boundary.
BA—5 to 12 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine faint dark yellowish brown (10YR 4/4) masses of oxidized iron; strongly acid; clear smooth boundary.
Bt1—12 to 20 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable; few very fine, fine, and medium roots; few faint clay films on all faces of peds; many fine distinct dark yellowish brown (10YR 4/6) and yellowish

brown (10YR 5/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

Bt2—20 to 25 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable; few very fine, fine, and medium roots; few faint clay films on all faces of peds; common fine and medium faint brown (10YR 4/3) iron depletions and many fine distinct dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

Bt3—25 to 50 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on all faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and many fine distinct yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

Btg—50 to 60 inches; grayish brown (10YR 5/2) loam; weak fine subangular blocky structure; friable; few fine and medium roots; few faint clay films on all faces of peds; many fine and medium distinct yellowish brown (10YR 5/4 and 5/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Solum thickness: More than 30 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent gravel and cobbles

Ap horizon (if it occurs):
Hue—10YR
Value—4
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—0 to 15 percent gravel and cobbles

BA horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 35 percent gravel and cobbles

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture (in the fine-earth fraction)—loam or clay loam
Rock fragments—0 to 35 percent gravel and cobbles

Btg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2
Texture (in the fine-earth fraction)—loam or clay loam
Rock fragments—0 to 35 percent gravel and cobbles

Dekalb Series

Physiographic province: Valley and Ridge
Landform: Mountains and hills
Parent material: Residuum weathered from sandstone
Drainage class: Excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 8 to 80 percent

Associated Soils

- Alticrest soils, which have a coarse-loamy particle size; on similar landforms
- Lehew soils, which have redder colors than the Dekalb soils; on similar landforms
- Lily soils, which have a fine-loamy particle size and an argillic horizon; on similar landforms
- McClung soils, which are very deep, have a fine-loamy particle-size, and have an argillic horizon; on similar landforms
- Oriskany soils, which are very deep; on toeslopes and footslopes in colluvium derived from sandstone
- Watahala soils, which are very deep and have a fine-loamy over clayey particle size; on similar landforms in gravelly residuum over clay residuum weathered from cherty limestone

Taxonomic Classification

Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

Typical Pedon

Dekalb channery silt loam in an area of Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony; Alleghany County, Virginia; approximately 3,700 feet south and 87 degrees west of the intersection of U.S. Forest Service Road 125 and U.S. Forest Service Road 125D, near the summit of Piney Ridge, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 50 minutes 0 seconds N. and long. 79 degrees 54 minutes 31 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A—1 to 2 inches; very dark grayish brown (10YR 3/2) channery sandy loam; weak fine granular structure; very friable; many fine and medium roots; 4 percent sandstone cobbles and 12 percent sandstone channers; extremely acid; clear smooth boundary.
Bw—2 to 18 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine subangular blocky structure; very friable; many fine and medium roots; 9 percent sandstone cobbles and 26 percent sandstone channers; very strongly acid; gradual wavy boundary.
BC—18 to 30 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 11 percent sandstone cobbles and 34 percent sandstone channers; very strongly acid; clear wavy boundary.
R—30 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture (in the fine-earth fraction)—sandy loam
Rock fragments—15 to 35 percent channers and cobbles

E horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—2 to 4
Texture (in the fine-earth fraction)—sandy loam or loam
Rock fragments—15 to 35 percent channers and cobbles

BA horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—15 to 35 percent channers and cobbles

Bw horizon:
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—35 to 60 percent channers and cobbles

BC horizon:
Hue—10YR or 7.5YR
Value—5 to 8
Chroma—4 to 8
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—35 to 60 percent channers and cobbles

Dunning Series

Physiographic province: Valley and Ridge
Landform: Floodplains in river valleys
Parent material: Alluvium derived from limestone
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Massanetta soils, which are moderately well drained, have a fine-loamy particle size, and are carbonatic; on similar landforms

Taxonomic Classification

Fine, mixed, active, mesic Fluvaquentic Endoaquolls

Typical Pedon

Dunning silt loam, 0 to 3 percent slopes, occasionally flooded; Alleghany County, Virginia; approximately 650 feet south and 83 degrees east of the intersection of Highway US-220 and Highway VA-640, south of Little Mountain, in a hay field;

Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 52 minutes 9 seconds N. and long. 79 degrees 56 minutes 35 seconds W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine and fine and common medium roots; neutral; clear smooth boundary.

AB—3 to 10 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; friable; many very fine and fine and common medium roots; many fine faint brown (7.5YR 4/3) iron-manganese masses; neutral; clear smooth boundary.

Bg1—10 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam; strong fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine and few medium roots; many fine faint brown (7.5YR 4/3) iron-manganese masses; neutral; clear smooth boundary.

Bg2—13 to 16 inches; dark gray (10YR 4/1) silty clay loam; strong medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; many fine distinct brown (7.5YR 4/3) iron-manganese masses; neutral; clear smooth boundary.

Bg3—16 to 32 inches; gray (10YR 5/1) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine and fine roots; common medium prominent reddish brown (5YR 4/4) and many fine distinct brown (7.5YR 4/4) iron-manganese masses; neutral; clear smooth boundary.

Cg1—32 to 38 inches; dark gray (10YR 4/1) silty clay loam; massive; firm, moderately sticky, moderately plastic; few very fine and fine roots; common medium prominent reddish brown (5YR 4/4) iron-manganese masses; slightly alkaline; clear smooth boundary.

Cg2—38 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm, moderately sticky, moderately plastic; many fine and medium prominent reddish brown (2.5YR 4/4) iron-manganese masses; 3 percent gastropod shells; slightly alkaline.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Slightly acid to slightly alkaline (in unlimed areas)

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 3 percent gravel and cobbles

AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture (in the fine-earth fraction)—silt loam or silty clay loam
Rock fragments—0 to 3 percent gravel and cobbles

Bg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 3 percent gravel and cobbles

Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay; some pedons have stratified layers of silt loam, loam, or sandy loam below a depth of 40 inches
Rock fragments—0 to 3 percent gravel and cobbles

Escatawba Series

Physiographic province: Valley and Ridge
Landform: Base of slopes on hills and mountains and areas in valleys
Parent material: Colluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 35 percent

Associated Soils

- Oriskany soils, which have a loamy-skeletal particle size and do not have a seasonal high water table; on similar landforms
- Shelocta soils, which do not have a seasonal high water table; on similar landforms

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Oxyaquic Paleudults

Typical Pedon

Escatawba loam, 3 to 8 percent slopes, very stony; Alleghany County, Virginia; approximately 1,400 feet north and 84 degrees west of the intersection of Highway VA-613 and U.S. Forest Service Road 351, near Spice Run, in planted pine; Jordan Mines, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 39 minutes 44 seconds N. and long. 80 degrees 4 minutes 8 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A—1 to 3 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine and common medium roots; 5 percent gravel; very strongly acid; clear smooth boundary.
BE—3 to 17 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common very fine and fine and few medium roots; 2 percent gravel; very strongly acid; gradual smooth boundary.
Bt1—17 to 30 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; very friable, slightly sticky, moderately plastic; few very fine, fine, and medium roots; few distinct strong brown (7.5YR 5/6) clay films on all faces of peds; 2 percent gravel; strongly acid; clear smooth boundary.
2Bt2—30 to 44 inches; strong brown (7.5YR 5/6) clay loam; strong medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common distinct strong brown (7.5YR 5/6) clay films and many prominent light yellowish brown (10YR 6/4) silt coats on all faces of peds; common medium distinct yellowish red (5YR 5/6) masses of oxidized iron; 12 percent gravel; strongly acid; gradual smooth boundary.
2Bt3—44 to 50 inches; strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) gravelly clay loam; strong medium subangular blocky structure; friable, moderately

sticky, moderately plastic; few very fine and fine roots; common distinct strong brown (7.5YR 5/6) clay films on all faces of peds; common fine distinct pale brown (10YR 6/3) iron depletions; 17 percent gravel; strongly acid; gradual smooth boundary.

2Bt4—50 to 65 inches; strong brown (7.5YR 5/6) cobbly clay loam; strong medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine roots; common distinct strong brown (7.5YR 5/6) clay films on all faces of peds; common medium prominent pinkish gray (7.5YR 6/2) iron depletions and many medium prominent yellowish red (5YR 5/8) masses of oxidized iron; 6 percent cobbles and 19 percent gravel; strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Depth to 2Bt horizon: 5 to 40 inches
Reaction: Extremely acid to strongly acid in the A and E horizons and very strongly acid or strongly acid in the Bt and 2Bt horizons (in unlimed areas)

A horizon:
Hue—10YR
Value—3 to 6
Chroma—1 to 3
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 15 percent gravel and cobbles

BE horizon or E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture (in the fine-earth fraction)—loam, silt loam, or fine sandy loam
Rock fragments—0 to 25 percent gravel and cobbles

Bt horizon:
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, silt loam, clay loam, or silty clay loam (the particle size control section averages 18 to 35 percent clay)
Rock fragments—0 to 35 percent gravel and cobbles

2Bt horizon:
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—clay loam, silty clay loam, or clay
Rock fragments—10 to 35 percent gravel, cobbles, and stones in the upper part of the horizon and 15 to 50 percent gravel, cobbles, and stones in the lower part

Faywood Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from limestone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low

Depth class: Moderately deep
Slope range: 8 to 55 percent

Associated Soils

- Berks soils, which have a loamy-skeletal particle size; on similar landforms but at the higher elevations, in residuum weathered from shale
- Caneyville soils, which have a fine particle size and have hues redder than 7.5YR in some part of the argillic horizon; on similar landforms in residuum weathered from limestone
- Murrill soils, which are very deep; on footslopes and toeslopes
- Poplimento soils, which are very deep; on similar landforms

Taxonomic Classification

Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Faywood silty clay loam in an area of Faywood-Poplimento complex, 15 to 35 percent slopes; Bath County, Virginia; approximately 6,500 feet south and 20 degrees east of the intersection of Highway US-220 and Highway VA-647, in pasture; Falling Spring, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 54 minutes 39 seconds N. and long. 79 degrees 52 minutes 41 seconds W.

Ap—0 to 6 inches; dark brown (10YR 3/3) silty clay loam; moderate medium granular and moderate fine granular structure; friable, slightly sticky, slightly plastic; many fine roots and many very fine roots; slightly acid; clear wavy boundary.

Bt1—6 to 15 inches; dark yellowish brown (10YR 4/6) clay; moderate coarse subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots and common very fine roots; common prominent clay films on all faces of peds; neutral; gradual wavy boundary.

Bt2—15 to 24 inches; dark yellowish brown (10YR 4/6) clay; common medium prominent very dark gray (10YR 3/1) mottles; moderate coarse subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots and few very fine roots; common prominent clay films on all faces of peds; 10 percent shale, unspecified channers; slightly alkaline; abrupt wavy boundary.

R—24 inches; limestone bedrock interbedded with shale bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Slightly acid to slightly alkaline

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silty clay loam
Rock fragments—0 to 15 percent channers

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—clay, silty clay, or silty clay loam
Rock fragments—0 to 15 percent channers

BC or C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture (in the fine-earth fraction)—clay, silty clay, or silty clay loam
Rock fragments—0 to 15 percent channers

Frederick Series

Physiographic province: Valley and Ridge
Landform: Hills; some areas have karst topography
Parent material: Residuum weathered from limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 55 percent

Associated Soils

- Caneyville soils, which are moderately deep; on similar landforms
- McClung soils, which have a fine-loamy particle size; on summits, shoulders, and backslopes in areas that formed in residuum derived from sandstone
- Murrill soils, which are on footslopes and toeslopes in colluvium derived from sandstone and shale
- Watahala soils, which have a fine-loamy over clayey particle-size and are deeper to clay than the Frederick soils; on similar landforms

Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Paleudults

Typical Pedon

Frederick silt loam, 8 to 15 percent slopes; Alleghany County, Virginia; approximately 6,300 feet south and 32 degrees west of the intersection of Highway US-220 and Highway VA-606, in the area of Sinking Spring, in pasture; Falling Spring, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 53 minutes 25 seconds N. and long. 79 degrees 54 minutes 40 seconds W.

Ap—0 to 3 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable, slightly sticky, slightly plastic; common very fine and fine roots; 10 percent chert gravel; moderately acid; clear smooth boundary.

BA—3 to 8 inches; yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common very fine and fine roots; 10 percent chert gravel; moderately acid; clear smooth boundary.

Bt1—8 to 12 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; many distinct clay films on all faces of peds; 2 percent chert gravel; moderately acid; clear smooth boundary.

Bt2—12 to 20 inches; strong brown (7.5YR 5/6) silty clay; strong medium subangular blocky structure; friable, moderately sticky, very plastic; few very fine and fine roots; many distinct clay films on all faces of peds; 2 percent chert gravel; strongly acid; gradual smooth boundary.

Bt3—20 to 46 inches; yellowish red (5YR 5/6) silty clay; many medium strong brown (7.5YR 5/6) mottles; strong medium subangular blocky structure; friable, moderately sticky, very plastic; few very fine and fine roots; few prominent dark

yellowish brown (10YR 4/6) and very pale brown (10YR 7/3) silt coats and few prominent clay films on all faces of peds; 1 percent chert gravel; strongly acid; diffuse smooth boundary.

Bt4—46 to 72 inches; yellowish red (5YR 5/6) silty clay; strong medium subangular blocky structure; firm, moderately sticky, very plastic; few very fine and fine roots; common prominent dark yellowish brown (10YR 4/6) and very pale brown (10YR 7/3) silt coats and common prominent clay films on all faces of peds; 1 percent chert gravel; strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 72 inches
Reaction: Very strongly acid to moderately acid (in unlimed areas)

Ap horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 30 percent gravel and 0 to 5 percent cobbles

A horizon (if it occurs):
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—0 to 30 percent gravel and 0 to 5 percent cobbles

BA horizon or BE horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silt loam, loam, clay loam, or silty clay loam
Rock fragments—0 to 45 percent gravel and 0 to 3 percent cobbles

Bt horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silty clay loam, clay loam, silty clay, or clay
Rock fragments—0 to 30 percent gravel and 0 to 5 percent cobbles

Gilpin Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from shale and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 8 to 25 percent

Associated Soils

- Berks soils, which have a loamy-skeletal particle size and do not have an argillic horizon; on similar landforms
- Blairton soils, which are moderately well drained; on similar landforms

- Weikert soils, which are shallow and have a loamy-skeletal particle size; on similar landforms
- Wharton soils, which are deep or very deep and moderately well drained; on similar landforms

Taxonomic Classification

Fine-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon

Gilpin silt loam, 15 to 25 percent slopes; Bath County, Virginia; approximately 0.25 mile northeast of the intersection of Forest Service Road 361 and Forest Service Road 361E, in the area of Little Mountain, in woodland; Nimrod Hall, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 59 minutes 3 seconds N. and long. 79 degrees 42 minutes 34 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.

A—1 to 2 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; very friable, nonsticky, nonplastic; many fine and medium and common coarse roots; 10 percent acid shale channers; very strongly acid; clear wavy boundary.

E—2 to 3 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; many fine and medium and common coarse roots; 15 percent acid shale channers; very strongly acid; clear wavy boundary.

BE—3 to 7 inches; yellowish brown (10YR 5/4) channery silt loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common very fine, fine, and medium roots; 15 percent acid shale channers; very strongly acid; gradual wavy boundary.

Bt—7 to 26 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; many distinct continuous clay films on vertical faces of peds; 20 percent acid shale channers; very strongly acid; clear wavy boundary.

BC—26 to 32 inches; yellowish brown (10YR 5/6) very channery silty clay loam; common medium distinct strong brown (7.5YR 5/8) and common fine distinct pale brown (10YR 6/3) mottles; moderate coarse subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; few distinct discontinuous clay films on vertical faces of peds; 35 percent acid shale channers; very strongly acid; abrupt wavy boundary.

Cr—32 inches; pale olive (5Y 6/3) shale bedrock.

Range in Characteristics

Solum thickness: 18 to 36 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—5 to 15 percent gravel and channers

E and BE horizons:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 5

Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—5 to 35 percent gravel and channers

Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture (in the fine-earth fraction)—silt loam, loam, clay loam, or silty clay loam
Rock fragments—5 to 35 percent channers

BC or C horizon:
Hue—10YR to 7.5YR
Value—4 or 5
Chroma—2 to 6
Texture (in the fine-earth fraction)—silt loam, loam, or silty clay loam
Rock fragments—30 to 50 percent channers

Cr horizon:
Bedrock—soft to moderately hard shale, siltstone, and fine-grained sandstone

R layer (if it occurs):
Bedrock—moderately hard to hard shale, siltstone, and fine-grained sandstone

Gladehill Series

Physiographic province: Valley and Ridge
Landform: Floodplains in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Coursey soils, which are moderately well drained, have a fine-loamy particle size, and do not have a mollic epipedon; on low stream terraces
- Ogles soils, which have a loamy-skeletal particle size and do not have a mollic epipedon; on similar landforms
- Wolfgap soils, which have a fine-loamy particle size; on similar landforms

Taxonomic Classification

Coarse-loamy, siliceous, superactive, mesic Fluventic Hapludolls

Typical Pedon

Gladehill loam, 0 to 3 percent slopes, protected; Alleghany County, Virginia; approximately 750 feet north and 74 degrees east of the intersection of Highways VA-687 and VA-641, along the Jackson River, in a hayfield; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 52 minutes 8 seconds N. and long. 79 degrees 59 minutes 21 seconds W.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; very friable; many very fine and fine roots; neutral; clear smooth boundary.
A—7 to 14 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; very friable; common very

fine and fine roots; common insect casts; 1 percent krotovinas (volume percent); neutral; gradual smooth boundary.

Bw1—14 to 25 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; few insect casts; 3 percent krotovinas (volume percent); neutral; gradual smooth boundary.

Bw2—25 to 40 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky structure; very friable; few very fine and roots; neutral; clear smooth boundary.

BC—40 to 54 inches; brown (10YR 4/3) sandy clay loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; few black (10YR 2/1) manganese coatings on faces of peds; neutral; clear smooth boundary.

C—54 to 60 inches; brown (10YR 4/3) fine sandy loam; massive; very friable; neutral.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Slightly acid or neutral (in unlimed areas)

Ap horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 15 percent gravel

A horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture (in the fine-earth fraction)—loam, sandy loam, or fine sandy loam
Rock fragments—0 to 15 percent gravel

Bw horizon:
Hue—10YR to 7.5YR
Value—3 to 5
Chroma—3 to 5
Texture (in the fine-earth fraction)—loam, sandy loam, or fine sandy loam
Rock fragments—0 to 15 percent gravel

BC and C horizons:
Hue—10YR to 7.5YR
Value—3 or 4
Chroma—3 or 4
Texture (in the fine-earth fraction)—loam, sandy loam, fine sandy loam, or sandy clay loam
Rock fragments—0 to 35 percent gravel

Lehew Series

Physiographic province: Valley and Ridge
Landform: Mountains
Parent material: Red residuum weathered from sandstone
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 8 to 80 percent

Associated Soils

- Berks soils, which have more silt, less sand, and browner colors than the Lehew soils; on similar landforms in residuum weathered from shale and siltstone
- Dekalb soils, which have browner colors than the Lehew soils; on similar landforms
- Oriskany soils, which are very deep; at the base of slopes

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, mesic Typic Dystrudepts

Typical Pedon

Lehew channery sandy loam in an area of Lehew-Berks complex, 15 to 35 percent slopes, very stony; Alleghany County, Virginia; approximately 1,300 feet north and 17 degrees east of the intersection of Highway VA-602 and U.S. Forest Service Road 613, west of Big Branch, in a roadcut; Glace, West Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 41 minutes 25 seconds N. and long. 80 degrees 17 minutes 27 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.

A—1 to 2 inches; brown (7.5YR 4/2) channery sandy loam; weak fine granular structure; friable; common very fine, fine, and medium roots; 20 percent sandstone channers; extremely acid; clear smooth boundary.

Bw—2 to 15 inches; reddish brown (5YR 4/3) very channery loam; weak fine subangular blocky structure; friable; few very fine, fine, and medium roots; 40 percent sandstone channers; strongly acid; gradual wavy boundary.

BC—15 to 21 inches; reddish brown (5YR 4/3) very channery loam; weak fine subangular blocky structure; friable; few very fine, fine, and medium roots; 50 percent sandstone channers; strongly acid; clear wavy boundary.

C—21 to 27 inches; reddish brown (5YR 4/4) extremely channery sandy loam; massive; friable; few very fine and fine roots; lenses of soft, weathered bedrock; 65 percent sandstone channers; very strongly acid; clear wavy boundary.

R—27 inches; fractured reddish brown, fine-grained sandstone bedrock.

Range in Characteristics

Solum thickness: 15 to 30 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—1 or 2
Texture (in the fine-earth fraction)—sandy loam
Rock fragments—15 to 35 percent channers

Bw horizon:
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, sandy loam, or fine sandy loam
Rock fragments—20 to 40 percent channers

BC and C horizons:
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—2 to 4

Texture (in the fine-earth fraction)—sandy loam, loam, or fine sandy loam
Rock fragments—35 to 70 percent channers

Lily Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Residuum weathered from sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 8 to 55 percent

Associated Soils

- Dekalb soils, which have a loamy-skeletal particle size and do not have an argillic horizon; on similar landforms
- McClung soils, which are very deep; on similar landforms
- Oriskany soils, which are very deep and have a loamy-skeletal particle size; on footslopes and toeslopes

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Lily sandy loam in an area of Dekalb-Lily-McClung complex, 15 to 35 percent slopes; Alleghany County, Virginia; approximately 300 feet north and 8 degrees west of the intersection of Highway VA-658 and U.S. Forest Service Road 175, in the area of Peters Mountain, in woodland; Callaghan, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 46 minutes 39 seconds N. and long. 80 degrees 5 minutes 5 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A—1 to 3 inches; black (10YR 2/1) sandy loam; weak fine granular structure; very friable; many fine and medium roots; 14 percent sandstone channers; extremely acid; abrupt smooth boundary.
BE—3 to 17 inches; yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 8 percent sandstone gravel; very strongly acid; clear smooth boundary.
Bt1—17 to 27 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common faint clay films on all faces of peds; 5 percent sandstone gravel; very strongly acid; gradual smooth boundary.
Bt2—27 to 32 inches; strong brown (7.5YR 5/6) gravelly clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common faint clay films on all faces of peds; 30 percent sandstone gravel; very strongly acid; abrupt irregular boundary.
R—32 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR or 7.5YR
Value—2 to 5

Chroma—1 to 3
Texture (in the fine-earth fraction)—sandy loam
Rock fragments—5 to 15 percent gravel and channers

BA horizon (if it occurs) or BE horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 8
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—5 to 30 percent gravel

Bt horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, sandy clay loam, or clay loam
Rock fragments—5 to 35 percent gravel

BC or C horizon (if it occurs):
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, sandy loam, sandy clay loam, or clay loam
Rock fragments—5 to 35 percent gravel

Macove Series

Physiographic province: Valley and Ridge
Landform: Base of slopes on hills and mountains and areas in valleys
Parent material: Colluvium derived from shale, siltstone, and sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 3 to 15 percent

Associated Soils

- Berks soils, which are moderately deep; on summits, shoulders, and backslopes in residuum weathered from shale
- Ogles soils, which are susceptible to flooding; on adjacent floodplains in alluvium
- Shelocta soils, which have a fine-loamy particle size; on similar landforms

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Hapludults

Typical Pedon

Macove channery silt loam, 3 to 15 percent slopes, very stony; Pocahontas County, West Virginia; approximately 6,300 feet due west of the intersection of Highway WV-28 and Thorny Creek Road, in woodland; Clover Lick, West Virginia USGS 7.5 Minute Quadrangle; lat. 38 degrees 16 minutes 1 second N. and long. 79 degrees 59 minutes 22 seconds W.

A—0 to 1 inch; dark brown (10YR 3/3) channery silt loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 5 percent stones and 15 percent channers; very strongly acid; abrupt wavy boundary.

E—1 to 4 inches; brown (10YR 5/3) channery loam; weak fine subangular blocky structure parting to weak fine granular; friable; many very fine, fine, medium, and coarse roots; 5 percent stones, 5 percent cobbles, and 20 percent channers; very strongly acid; clear wavy boundary.

BE—4 to 7 inches; yellowish brown (10YR 5/6) channery silt loam; weak medium subangular blocky and weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 5 percent cobbles and 25 percent channers; very strongly acid; clear wavy boundary.

Bt1—7 to 14 inches; yellowish brown (10YR 5/8) very channery silt loam; weak medium subangular blocky structure; friable; common fine, medium, and coarse roots; few distinct clay films on surfaces along pores; 5 percent cobbles and 30 percent channers; very strongly acid; clear wavy boundary.

Bt2—14 to 23 inches; yellowish brown (10YR 5/8) very channery silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine, medium, and coarse roots; few distinct clay films on surfaces along pores, along root channels, on all faces of peds, and on rock fragments; 5 percent stones, 10 percent cobbles, and 30 percent channers; very strongly acid; clear wavy boundary.

Bt3—23 to 37 inches; strong brown (7.5YR 5/6) very channery silty clay loam; weak fine and medium subangular blocky structure; friable; few fine and medium roots; few distinct clay films on surfaces along pores, along root channels, on all faces of peds, and on rock fragments; 10 percent cobbles, 10 percent boulders, and 25 percent channers; very strongly acid; gradual wavy boundary.

Bt4—37 to 65 inches; brown (7.5YR 5/4) extremely channery silty clay loam; weak medium and coarse subangular blocky structure; friable; few fine and medium roots; few distinct clay films on surfaces along pores, along root channels, on all faces of peds, and on rock fragments; common medium black (10YR 2/1) iron-manganese concretions; 10 percent cobbles, 10 percent stones, 15 percent boulders, and 30 percent channers; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—15 to 35 percent channers, cobbles, and stones

E horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—10 to 40 percent channers, cobbles, and stones

BE horizon:
Hue—10YR
Value—4 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—15 to 55 percent channers, cobbles, and stones

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, silt loam, or silty clay loam
Rock fragments—15 to 65 percent channers, cobbles, stones, and boulders; average of more than 35 percent in the particle-size control section

Massanetta Series

Physiographic province: Valley and Ridge
Landform: Floodplains in a river valley
Parent material: Alluvium derived from limestone (calcareous marl sediments)
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Dunning soils, which are poorly drained, have a fine particle size, and have less than 40 percent $CaCO_3$ equivalent; on similar landforms
- Purdy soils, which are poorly drained, have a fine particle-size, have less than 40 percent $CaCO_3$ equivalent, and do not have a mollic epipedon; on low to high stream terraces

Taxonomic Classification

Fine-loamy, carbonatic, mesic Fluvaquentic Hapludolls

Typical Pedon

Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded; Alleghany County, Virginia; approximately 400 feet south and 82 degrees west of the intersection of Highway US-220 and Highway VA-640, in the area of Little Mountain, in a wooded area; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 52 minutes 10 seconds N. and long. 79 degrees 56 minutes 48 seconds W.

A1—0 to 10 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many very fine and fine and common medium roots; 2 percent gastropod shells; common fine and medium indurated cemented carbonate nodules; violent effervescence; slightly alkaline; abrupt smooth boundary.

A2—10 to 12 inches; dark brown (10YR 3/3) loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; very friable; common very fine and fine and few medium roots; 2 percent gastropod shells; common medium indurated cemented carbonate nodules; violent effervescence; moderately alkaline; abrupt smooth boundary.

Bw1—12 to 24 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky structure; very friable; common fine and medium roots; 2 percent gastropod shells; common fine and medium indurated cemented carbonate nodules; violent effervescence; moderately alkaline; abrupt smooth boundary.

Bw2—24 to 28 inches; brown (10YR 4/3) loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 2 percent gastropod shells; common fine and medium faint dark yellowish brown (10YR 4/4) masses of oxidized iron; common fine and medium indurated cemented carbonate nodules; violent effervescence; moderately alkaline; abrupt smooth boundary.

Bw3—28 to 39 inches; brown (10YR 4/3) loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; common (3 percent) soft masses of secondary lime; 1 percent gastropod shells; few fine faint grayish brown (10YR 5/2) iron depletions and common fine and medium faint yellowish brown (10YR 5/6) masses of oxidized iron; common fine indurated cemented carbonate nodules; violent effervescence; moderately alkaline; clear smooth boundary.

C1—39 to 50 inches; grayish brown (10YR 5/2) loam; massive; very friable; few very fine and fine roots; 1 percent gastropod shells; common (3 percent) soft masses of secondary lime; many fine faint yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) masses of oxidized iron; few fine indurated cemented carbonate nodules; violent effervescence; moderately alkaline; clear smooth boundary.

C2—50 to 61 inches; grayish brown (10YR 5/2) sandy loam; massive; friable; few very fine and fine roots; 1 percent gastropod shells; many medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 4/6) masses of oxidized iron; common fine and medium indurated cemented carbonate nodules; violent effervescence; moderately alkaline; clear smooth boundary.

2C3—61 to 70 inches; pale brown (10YR 6/3) loamy sand; single grain; loose; few very fine roots; many medium distinct strong brown (7.5YR 4/6) and yellowish brown (10YR 5/6) masses of oxidized iron; violent effervescence; moderately alkaline.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: More than 60 inches
Reaction: Slightly alkaline or moderately alkaline (pH 7.4 to 8.4)
Effervesence: Strongly to violently effervescent; the carbonates in this soil are coarse carbonate depositional forms and not pedogenic secondary carbonates

A or Ap horizon:
Hue—10YR
Value—3
Chroma—1 to 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 10 percent gravel

Bw horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture (in the fine-earth fraction)—silt loam, loam, clay loam, or silty clay loam
Rock fragments—0 to 10 percent gravel

C horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—1 to 3
Texture (in the fine-earth fraction)—loam, silt loam, clay loam, silty clay loam, or sandy loam
Rock fragments—0 to 15 percent gravel

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—1 to 3
Texture (in the fine-earth fraction)—loamy sand to clay
Rock fragments—0 to 15 percent gravel

McClung Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Residuum weathered from sandstone with interbeds of limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 55 percent

Associated Soils

- Dekalb soils, which are moderately deep and have a loamy-skeletal particle size; on similar landforms
- Frederick soils, which have a fine particle size; on hills
- Lily soils, which are moderately deep; on similar landforms
- Oriskany soils, which have a loamy-skeletal particle size; at the base of slopes in colluvium derived from sandstone;
- Watahala soils, which have a fine-loamy over clayey particle size; on similar landforms

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Paleudults

Typical Pedon

McClung sandy loam in an area of McClung-Watahala-Dekalb complex, 8 to 15 percent slopes; Bath County, Virginia; 1.1 miles northeast of the intersection of Highways VA-609 and VA-624, about 180 yards southeast of Highway VA-624, in a wooded area on a northwest-facing aspect; Bath Alum, Virginia USGS 7.5 Minute Quadrangle; lat. 38 degrees 5 minutes 15 seconds N. and long. 79 degrees 40 minutes 10 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

E—2 to 3 inches; light gray (10YR 7/2) sandy loam; weak coarse granular structure; very friable, nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; extremely acid; abrupt smooth boundary.

BE—3 to 11 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; few very fine and fine roots; few fine dendritic tubular pores; very strongly acid; clear smooth boundary.

Bt1—11 to 19 inches; yellowish brown (10YR 5/8) sandy loam; weak coarse subangular blocky structure; friable, slightly sticky, nonplastic; few very fine and fine roots; common fine dendritic tubular pores; very few faint clay films on surfaces along pores and few faint clay films on all faces of peds; very strongly acid; gradual wavy boundary.

Bt2—19 to 28 inches; strong brown (7.5YR 5/8) sandy clay loam; weak coarse subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; common fine dendritic tubular pores; very few faint clay films on surfaces along pores and few faint clay films on all faces of peds; very strongly acid; clear wavy boundary.

Bt3—28 to 38 inches; strong brown (7.5YR 5/8) sandy clay loam; common coarse red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; many fine dendritic tubular pores; very few prominent clay films on surfaces along pores and common prominent clay films on all faces of peds; very strongly acid; abrupt wavy boundary.

Bt4—38 to 51 inches; yellowish red (5YR 5/6) sandy clay loam; common medium red (2.5YR 4/6) and brownish yellow (10YR 6/8) mottles; strong coarse subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; common very fine dendritic tubular pores; very few prominent clay films on surfaces along pores and common prominent clay films on all faces of peds; very strongly acid; gradual wavy boundary.

Bt5—51 to 65 inches; reddish yellow (7.5YR 6/8) sandy clay loam; common fine yellow (10YR 7/6) mottles; weak coarse subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; few distinct clay films on all faces of peds; few fine prominent clay bodies; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—0 to 15 percent gravel

Ap horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—0 to 15 percent gravel

E horizon:
Hue—10YR
Value—4 to 7
Chroma—2 or 3
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, loamy sand, or loamy fine sand
Rock fragments—0 to 15 percent gravel

BE horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—0 to 35 percent gravel

Bt horizon:
Hue—10YR to 2.5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam or sandy loam in the upper part of the horizon and sandy clay loam, clay loam, or sandy clay in the lower part
Rock fragments—0 to 35 percent gravel

BC horizon (if it occurs):
Hue—10YR to 2.5YR
Value—5 or 6
Chroma—4 to 8

Texture (in the fine-earth fraction)—sandy clay loam, clay loam, or sandy clay
Rock fragments—0 to 35 percent gravel

Murrill Series

Physiographic province: Valley and Ridge
Landform: Base of slopes on hills and areas in valleys
Parent material: Colluvium derived from sandstone and shale over residuum weathered from limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 55 percent

Associated Soils

- Frederick soils, which have a fine particle size; on summits, shoulders, and backslopes in residuum weathered from limestone
- Oriskany soils, which have a loamy-skeletal particle size; on similar landforms
- Poplimento soils, which have a fine particle size; on summits, shoulders, and backslopes in residuum weathered from interbedded shale and limestone
- Watahala soils, which have a fine-loamy over clayey particle size; on summits, shoulders, and backslopes in residuum weathered from chert limestone

Taxonomic Classification

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Murrill cobbly loam, 15 to 35 percent slopes, very stony; Alleghany County, Virginia; approximately 4,100 feet north and 58 degrees east of the intersection of Highways VA-600 and VA-604, in the area of Peters Mountain, in a roadcut adjacent to an area of pasture; Alleghany, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 40 minutes 23 seconds N. and long. 80 degrees 12 minutes 4 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) cobbly loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 25 percent sandstone cobbles; very strongly acid; gradual smooth boundary.

BE—4 to 10 inches; yellowish brown (10YR 5/6) channery silt loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent sandstone channers; very strongly acid; gradual smooth boundary.

Bt1—10 to 15 inches; strong brown (7.5YR 5/6) channery silt loam; weak fine subangular blocky structure; very friable; common fine, medium, and coarse roots; few faint clay films on all faces of peds; 20 percent sandstone channers; very strongly acid; clear smooth boundary.

Bt2—15 to 23 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, slightly plastic; many fine and medium and common coarse roots; common distinct clay films on rock fragments and on all faces of peds; 2 percent sandstone cobbles and 30 percent sandstone channers; very strongly acid; gradual smooth boundary.

Bt3—23 to 31 inches; yellowish red (5YR 5/8) channery silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine and medium and few coarse roots; common distinct clay films on all faces of peds and on rock fragments; 15 percent sandstone channers; very strongly acid; gradual smooth boundary.

Bt4—31 to 40 inches; yellowish red (5YR 5/8) silty clay loam; few fine distinct brownish

yellow (10YR 6/8) mottles; strong medium subangular blocky structure; friable, very sticky, very plastic; common very fine and fine roots; many distinct clay films on all faces of peds; few fine black (10YR 2/1) iron-manganese masses; 2 percent sandstone channers; very strongly acid; gradual smooth boundary.

2Bt5—40 to 65 inches; yellowish red (5YR 5/8) silty clay; strong medium subangular blocky structure; firm, very sticky, very plastic; few very fine and fine roots; many distinct clay films on all faces of peds; many fine black (10YR 2/1) iron-manganese masses; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid to moderately acid (in unlimed areas)
Other properties: The Murrill soils in Alleghany County typically have an increase in clay content with increasing depth.

A or Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—loam
Rock fragments—10 to 30 percent gravel, channers, and cobbles

BE horizon or E horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, silt loam, or sandy loam
Rock fragments—10 to 30 percent gravel, channers, and cobbles

Bt horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, silt loam, clay loam, or silty clay loam
Rock fragments—10 to 30 percent gravel, channers, and cobbles

2Bt horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—clay loam, silty clay loam, or silty clay
Rock fragments—0 to 25 percent gravel, channers, and cobbles

Nicelytown Series

Physiographic province: Valley and Ridge
Landform: High stream terraces in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 15 percent

Associated Soils

- Cottonbend soils, which are well drained; on similar landforms

- Purdy soils, which are poorly drained and have a fine particle size; on similar landforms
- Sugarhol soils, which are well drained and have a fine particle size; on similar landforms
- Zoar soils, which are moderately well drained and have a fine particle size; on similar landforms

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Aquic Paleudults

Typical Pedon

Nicelytown silt loam, 3 to 8 percent slopes; Alleghany County, Virginia; approximately 1,850 feet south and 15 degrees west of the northern intersection of Highways VA-311 and VA-650, along Dunlap Creek; Alleghany, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 42 minutes 4 seconds N. and long. 80 degrees 12 minutes 47 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; strongly acid; gradual smooth boundary.

AB—5 to 8 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; very friable, nonsticky, nonplastic; common very fine and fine roots; common fine faint dark grayish brown (10YR 4/2) and common medium faint brown (10YR 5/3) iron depletions; strongly acid; clear smooth boundary.

Bt1—8 to 17 inches; pale brown (10YR 6/3) silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; few fine vesicular pores; faint patchy clay films on all faces of peds; common fine faint yellowish brown (10YR 5/4) and brown (10YR 5/3) iron depletions; strongly acid; diffuse smooth boundary.

Bt2—17 to 26 inches; pale brown (10YR 6/3) clay loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; few fine vesicular pores; faint patchy clay films on all faces of peds; many fine faint yellowish brown (10YR 5/4) and many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid; clear smooth boundary.

Bt3—26 to 34 inches; light yellowish brown (2.5Y 6/3) clay loam; weak medium subangular blocky structure; friable; few very fine roots; few fine vesicular pores; faint patchy clay films on all faces of peds; many fine distinct gray (10YR 6/1) iron depletions; many fine prominent strong brown (7.5YR 5/6) and many fine distinct brown (7.5YR 5/4) masses of oxidized iron; 5 percent rounded sandstone gravel; strongly acid; diffuse smooth boundary.

Btg—34 to 48 inches; light brownish gray (10YR 6/2) silty clay loam; weak fine subangular blocky structure; very friable; few very fine roots; faint patchy clay films on all faces of peds; many fine distinct yellowish brown (10YR 5/4) and many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; 5 percent rounded sandstone gravel; strongly acid; diffuse smooth boundary.

BCg—48 to 65 inches; light brownish gray (10YR 6/2) gravelly silty clay loam; weak fine subangular blocky structure; very friable; few very fine roots; many fine distinct yellowish brown (10YR 5/4) masses of oxidized iron; 16 percent rounded sandstone gravel; strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent gravel and cobbles

A horizon (if it occurs):
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture (in the fine-earth fraction)—silt loam, loam, or fine sandy loam
Rock fragments—0 to 15 percent gravel and cobbles

AB horizon and EB or BE horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, fine sandy loam, or silt loam
Rock fragments—0 to 15 percent gravel and cobbles

Bt horizon:
Hue—2.5Y to 7.5YR
Value—5 or 6
Chroma—3 to 8
Texture (in the fine-earth fraction)—loam, silt loam, clay loam, or silty clay loam
Rock fragments—0 to 35 percent gravel and cobbles

Btg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture (in the fine-earth fraction)—loam, clay loam, or silty clay loam
Rock fragments—0 to 50 percent gravel and cobbles

BC horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, clay loam, or silty clay loam
Rock fragments—0 to 50 percent gravel and cobbles

BCg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture (in the fine-earth fraction)—loam, clay loam, or silty clay loam
Rock fragments—0 to 50 percent gravel, channers, and cobbles

Ogles Series

Physiographic province: Valley and Ridge
Landform: Floodplains in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High

Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Coursey soils, which are moderately well drained and have a fine-loamy particle size; on low stream terraces
- Gladehill soils, have a coarse-loamy particle size and a mollic epipedon; on similar landforms
- Macove soils, which are not susceptible to flooding; on footslopes and toeslopes
- Shelocta soils, which have a fine-loamy particle size; on footslopes and toeslopes in colluvium
- Wolfgap soils, which have a fine-loamy particle size and a mollic epipedon; on similar landforms

Taxonomic Classification

Loamy-skeletal, siliceous, active, mesic Fluventic Dystrudepts

Typical Pedon

Ogles very cobbly loam, 0 to 3 percent slopes, occasionally flooded; Alleghany County, Virginia; approximately 0.5 mile north-northwest of the intersection of Highways VA-661 and I-64, on the bank of Ogle Creek, in woodland; Callaghan, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 49 minutes 34 seconds N. and long. 80 degrees 7 minutes 2 seconds W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) very cobbly loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; 23 percent sandstone gravel and 35 percent sandstone cobbles; strongly acid; clear smooth boundary.

Bw—5 to 28 inches; yellowish brown (10YR 5/4) extremely cobbly sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine, fine, and medium roots; 30 percent sandstone gravel and 37 percent sandstone cobbles; strongly acid; gradual smooth boundary.

C1—28 to 47 inches; yellowish brown (10YR 5/4) extremely cobbly sandy loam; weak coarse granular structure; very friable, nonsticky, nonplastic; common very fine and fine roots; 30 percent sandstone cobbles and 41 percent sandstone gravel; strongly acid; gradual smooth boundary.

C2—47 to 60 inches; yellowish brown (10YR 5/4) very cobbly sandy loam; weak coarse granular structure; very friable, slightly sticky, nonplastic; few very fine and fine roots; 25 percent sandstone gravel and 30 percent sandstone cobbles; strongly acid.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid to moderately acid (in unlimed areas)
Other features: Redoximorphic features that occur below a depth of 42 inches

A horizon:
Hue—10YR or 7.5YR
Value—2 to 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—loam
Rock fragments—35 to 60 percent gravel and cobbles

Bw horizon:
Hue—10YR or 7.5YR

Value—4 or 5
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or sandy loam
Rock fragments—35 to 70 percent gravel and cobbles

C horizon:
Hue—7.5YR to 10YR
Value—4 to 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—sandy loam or loamy sand
Rock fragments—35 to 80 percent gravel and cobbles

Oriskany Series

Physiographic province: Valley and Ridge
Landform: Base of slopes on hills and mountains, areas in valleys, and areas on old alluvial terraces
Parent material: Colluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 3 to 55 percent

Associated Soils

- Dekalb soils, which are moderately deep and do not have an argillic horizon; on mountains in residuum weathered from sandstone
- Escatawba soils, which have a fine-loamy particle size and a perched seasonal high water table above a clay discontinuity; on similar landforms
- Lehew soils, which are moderately deep and do not have an argillic horizon; on mountains in residuum weathered from sandstone
- Lily soils, which are moderately deep and have a fine-loamy particle size; on mountains in residuum weathered from sandstone
- Murrill soils, which have a fine-loamy particle size; on similar landforms

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Oriskany cobbly sandy loam, 35 to 55 percent slopes, extremely stony; Alleghany County, Virginia; approximately 7,900 feet north and 73 degrees east of the intersection of Highways VA-18 and VA-657, near Horse Mountain, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 45 minutes 31 seconds N. and long. 79 degrees 57 minutes 49 seconds W.

Oi—0 to 2 inches; slightly decomposed plant material.
A—2 to 6 inches; very dark grayish brown (10YR 3/2) cobbly sandy loam; weak fine granular structure; very friable; many fine, medium, and coarse and few very fine roots; 5 percent sandstone stones, 10 percent sandstone gravel, and 15 percent sandstone cobbles; strongly acid; abrupt smooth boundary.
E—6 to 11 inches; brown (10YR 5/3) cobbly sandy loam; weak fine granular structure; very friable; many very fine and fine, common medium, and few coarse roots; 10 percent sandstone gravel and 20 percent sandstone cobbles; strongly acid; clear smooth boundary.
Bt1—11 to 29 inches; brown (7.5YR 4/4) very cobbly loam; weak fine subangular blocky structure; friable; common very fine and fine and few medium and coarse

roots; few distinct clay bridges between sand grains; 5 percent sandstone stones, 15 percent sandstone gravel, and 25 percent sandstone cobbles; strongly acid; gradual wavy boundary.

Bt2—29 to 40 inches; brown (7.5YR 4/4) very cobbly loam; moderate fine subangular blocky structure; friable; common very fine and fine and few medium and coarse roots; few distinct clay bridges between sand grains; 5 percent sandstone stones, 20 percent sandstone gravel, and 30 percent sandstone cobbles; very strongly acid; clear wavy boundary.

Bt3—40 to 65 inches; brown (7.5YR 4/4) extremely cobbly loam; moderate fine subangular blocky structure; friable; few fine and medium roots; few distinct clay bridges between sand grains; 10 percent sandstone stones, 20 percent sandstone gravel, and 30 percent sandstone cobbles; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—sandy loam
Rock fragments—15 to 65 percent gravel, cobbles, stones, and boulders

E horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 or 4
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, or loam
Rock fragments—15 to 65 percent gravel, cobbles, and stones

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, sandy clay loam, or clay loam
Rock fragments—35 to 75 percent gravel, cobbles, and stones

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—sandy loam, loam, or sandy clay loam
Rock fragments—35 to 75 percent gravel, cobbles, and stones

Poplimento Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from limestone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 55 percent

Associated Soils

- Berks soils, which are moderately deep and have a loamy-skeletal particle size; on summits, shoulders, and backslopes in residuum weathered from shale
- Caneyville soils, which are moderately deep; on similar landforms
- Faywood soils, which are moderately deep; on similar landforms in residuum weathered from limestone and shale
- Murrill soils, which are very deep and have a fine-loamy particle size; on footslopes, on toeslopes, and in drainageways in colluvium

Taxonomic Classification

Fine, mixed, subactive, mesic Ultic Hapludalfs

Typical Pedon

Poplimento silty clay loam in an area of Faywood-Poplimento complex, 8 to 15 percent slopes; Alleghany County, Virginia; approximately 5,650 feet south and 16 degrees west of the intersection of Highways VA-618 and VA-616, near Blue Spring Creek, in a roadcut; Strom, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 40 minutes 25 seconds N. and long. 79 degrees 59 minutes 51 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) silty clay loam; strong fine granular structure; very friable, moderately sticky, slightly plastic; many very fine and fine and common medium roots; 1 percent shale channers; moderately acid; abrupt smooth boundary.

Bt1—5 to 20 inches; yellowish red (5YR 5/8) silty clay; strong medium subangular blocky structure; friable, very sticky, very plastic; common very fine, fine, and medium roots; common distinct clay films on all faces of peds; 1 percent shale channers; strongly acid; gradual smooth boundary.

Bt2—20 to 35 inches; yellowish red (5YR 5/8) silty clay; many fine yellow (10YR 7/8) mottles; moderate medium subangular blocky structure; friable, very sticky, very plastic; few very fine, fine, and medium roots; common distinct clay films on all faces of peds; 2 percent shale channers; very strongly acid; gradual smooth boundary.

BC1—35 to 50 inches; yellowish red (5YR 5/6) and brownish yellow (10YR 6/8) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; 10 percent shale channers; very strongly acid; diffuse smooth boundary.

BC2—50 to 60 inches; yellowish red (5YR 5/6) and brownish yellow (10YR 6/8) channery silty clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; 20 percent shale channers; moderately acid.

Range in Characteristics

Solum thickness: More than 40 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid to slightly acid (in unlimed areas)

A or Ap horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 6
Texture (in the fine-earth fraction)—silty clay loam
Rock fragments—0 to 15 percent channers

BA horizon (if it occurs):
Hue—10YR or 7.5YR

Value—4 to 6
Chroma—3 to 8
Texture (in the fine-earth fraction)—silt loam, silty clay loam, or loam
Rock fragments—0 to 15 percent channers

Bt horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 15 percent channers in the upper part of the horizon and 0 to 55 percent channners in the lower part

BC or C horizon:
Hue—10YR to 5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silty clay loam or silty clay
Rock fragments—0 to 55 percent channers

Purdy Series

Physiographic province: Valley and Ridge
Landform: High stream terraces in a river valley; low stream terraces in some areas
Parent material: Alluvium derived from sandstone and shale
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Coursey soils, which are moderately well drained and have a fine-loamy particle size; on low stream terraces
- Cottonbend soils, which are well drained and have a fine-loamy particle size; on high stream terraces
- Nicelytown soils, which are moderately well drained and have a fine-loamy particle size; on high stream terraces
- Sugarhol soils, which are well drained; on high stream terraces
- Zoar soils, which are moderately well drained; on high stream terraces

Taxonomic Classification

Fine, mixed, active, mesic Typic Endoaquults

Typical Pedon

Purdy silty clay loam, 0 to 3 percent slopes; Alleghany County, Virginia; approximately 950 feet north and 20 degrees east of the southern intersection of Highways VA-311 and VA-650, near Dunlap Creek, in a cornfield; Alleghany, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 42 minutes 0 seconds N. and long. 80 degrees 12 minutes 56 seconds W.

Ap1—0 to 4 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate coarse granular structure; friable, moderately sticky, moderately plastic; common very fine and fine roots; few fine faint gray (10YR 5/1) iron depletions and common fine faint brown (10YR 4/3) iron-manganese masses; strongly acid; clear smooth boundary.
Ap2—4 to 8 inches; dark gray (10YR 4/1) silty clay loam; weak medium subangular

blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common fine distinct dark yellowish brown (10YR 4/4) iron-manganese masses; many fine pockets of material from the Ap1 horizon; strongly acid; clear smooth boundary.

BA—8 to 13 inches; gray (10YR 5/1) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; many fine distinct dark yellowish brown (10YR 4/4) iron-manganese masses; strongly acid; gradual smooth boundary.

Btg1—13 to 27 inches; gray (10YR 6/1) silty clay; strong medium subangular blocky structure; firm, very sticky, very plastic; few very fine and fine roots; few distinct clay films on all faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid; diffuse smooth boundary.

Btg2—27 to 31 inches; gray (2.5Y 6/1) clay; moderate medium subangular blocky structure; firm, very sticky, very plastic; few very fine and fine roots; few distinct clay films on all faces of peds; common fine prominent very dark grayish brown (10YR 3/2) iron-manganese masses and many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid; diffuse smooth boundary.

Cg—31 to 60 inches; gray (2.5Y 5/1) clay; massive; firm, very sticky, very plastic; common fine distinct very dark gray (10YR 3/1) iron-manganese masses and many medium prominent yellowish brown (10YR 5/6 and 5/8) masses of oxidized iron; strongly acid.

Range in Characteristics

Solum thickness: 28 to 50 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam
Rock fragments—0 to 5 percent gravel

A horizon (if it occurs):
Hue—10YR
Value—3
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam, silt loam, or loam
Rock fragments—0 to 5 percent gravel

BA horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture (in the fine-earth fraction)—clay loam, silty clay loam, or silt loam
Rock fragments—0 to 5 percent gravel

Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 5 percent gravel

Cg horizon:
Hue—10YR or 2.5Y

Value—4 to 7
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay, clay, or clay loam
Rock fragments—0 to 5 percent gravel or cobbles

Rough Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Residuum weathered from shale and siltstone
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Very shallow
Slope range: 15 to 100 percent

Associated Soils

- Berks soils, which are moderately deep, are well drained, and have a loamy-skeletal particle size; on similar landforms
- Shelocta soils, which are very deep and have a fine-loamy particle size; on footslopes and toeslopes in colluvium
- Weikert soils, which are shallow and have a loamy-skeletal particle size; on similar landforms

Taxonomic Classification

Loamy, mixed, active, acid, mesic Lithic Udorthents

Typical Pedon

Rough very channery silt loam in an area of Weikert-Rough complex, 55 to 80 percent slopes; Bath County, Virginia; approximately 2.3 miles northeast of the intersection of Highway VA-629 and the Bath-Alleghany County line, 1.8 miles south-southeast of the intersection of Highway VA-629 and Forest Service Road 125, in a wooded area; Healing Springs, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 54 minutes 37 seconds N. and long. 79 degrees 47 minutes 28 seconds W.

A—0 to 1 inch; dark yellowish brown (10YR 4/4) very channery silt loam; weak coarse granular structure; very friable, nonsticky, nonplastic; few very fine and fine roots; 55 percent shale channers; very strongly acid; abrupt smooth boundary.

Bw—1 to 5 inches; yellowish brown (10YR 5/6) extremely channery silt loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine and medium and few coarse roots; 70 percent shale channers; very strongly acid; clear wavy boundary.

C—5 to 7 inches; yellowish brown (10YR 5/4) extremely channery silt loam; massive; friable, nonsticky, nonplastic; common fine and medium and few coarse roots; 80 percent shale channers; very strongly acid; abrupt wavy boundary.

R—7 inches; olive brown (2.5Y 4/4) shale bedrock.

Range in Characteristics

Solum thickness: 0 to 8 inches
Depth to bedrock: 4 to 10 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR

Value—2 to 4
Chroma—1 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—35 to 60 percent channers

Bw horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—35 to 75 percent channers

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—45 to 80 percent channers

R layer:
Bedrock—hard or moderately hard shale, siltstone, or fine-grained sandstone

Shelocta Series

Physiographic province: Valley and Ridge
Landform: Base of slopes on hills and mountains and areas in valleys
Parent material: Colluvium derived from shale, siltstone, and some fine-grained sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 55 percent

Associated Soils

- Berks soils, which are moderately deep and have a loamy-skeletal particle size; on adjacent hills and mountains
- Coursey soils, which are moderately well drained and are susceptible to flooding; on low stream terraces
- Macove soils, which have a loamy-skeletal particle size; on similar landforms
- Ogles soils, which have a loamy-skeletal particle size and are susceptible to flooding; on floodplains
- Rough soils, which are very shallow, are somewhat excessively drained, and have a loamy-skeletal particle size; on adjacent mountains
- Weikert soils, which are shallow and have loamy-skeletal particle size; on adjacent hills and mountains

Taxonomic Classification

Fine-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon

Shelocta silt loam in an area of Shelocta-Berks complex, 15 to 35 percent slopes; Alleghany County, Virginia; approximately 5,450 feet north and 34 degrees east of the intersection of Highways VA-600 and VA-614, near Peters Mountain, in woodland; Jordan Mines, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 44 minutes 43 seconds N. and long. 80 degrees 5 minutes 1 second W.

A—0 to 2 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable; many very fine and fine and common medium roots; 10 percent shale channers; very strongly acid; clear smooth boundary.

BE—2 to 7 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; common very fine, fine, and medium roots; 15 percent shale channers; very strongly acid; gradual smooth boundary.

Bt1—7 to 18 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; few faint clay films on all faces of peds; 19 percent shale channers; strongly acid; gradual smooth boundary.

Bt2—18 to 38 inches; strong brown (7.5YR 5/6) channery silt loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; few distinct clay films on all faces of peds and on rock fragments; 19 percent shale channers; strongly acid; diffuse smooth boundary.

Bt3—38 to 50 inches; 40 percent brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; few distinct clay films on rock fragments and on all faces of peds; 20 percent shale channers; strongly acid; diffuse smooth boundary.

Bt4—50 to 60 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; few distinct clay films on rock fragments and on all faces of peds; 25 percent shale channers; strongly acid; diffuse smooth boundary.

BC—60 to 65 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; few very fine and fine roots; many fine faint pale brown (10YR 6/3) and many medium distinct light brownish gray (10YR 6/2) iron depletions; 25 percent shale channers; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—2 to 15 percent channers and cobbles

BE horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—5 to 35 percent channers and cobbles

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—loam, silt loam, or silty clay loam
Rock fragments—5 to 35 percent channers and cobbles

BC horizon:
Hue—10YR or 7.5YR
Value—4 to 6

Chroma—2 to 6
Texture (in the fine-earth fraction)—silt loam, loam, or silty clay loam
Rock fragments—15 to 70 percent channers and cobbles

Sugarhol Series

Physiographic province: Valley and Ridge
Landform: High stream terraces in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 3 to 15 percent

Associated Soils

- Cottonbend soils, which have a fine-loamy particle size; on similar landforms
- Nicelytown soils, which are moderately well drained and have a fine-loamy particle size; on similar landforms
- Purdy soils, which are poorly drained; on similar landforms
- Zoar soils, which are moderately well drained; on similar landforms

Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Paleudults

Typical Pedon

Sugarhol silt loam, 3 to 8 percent slopes; Bath County, Virginia; approximately 3,300 feet south and 40 degrees west of the southern intersection of Highways VA-600 and VA-603, in woodland; Falling Spring, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 59 minutes 10 seconds N. and long. 79 degrees 58 minutes 15 seconds W.

Oa—0 to 1 inch; highly decomposed plant material.
A—1 to 2 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; extremely acid; abrupt smooth boundary.
E—2 to 3 inches; grayish brown (10YR 5/2) silt loam; weak medium granular structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; very strongly acid; abrupt smooth boundary.
BE—3 to 11 inches; light yellowish brown (10YR 6/4) silt loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine, fine, medium, and coarse roots; 2 percent rounded gravel; very strongly acid; abrupt wavy boundary.
Bt1—11 to 34 inches; yellowish brown (10YR 5/6) silty clay; moderate fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; common distinct clay films on all faces of peds; 2 percent rounded gravel; very strongly acid; clear wavy boundary.
Bt2—34 to 53 inches; strong brown (7.5YR 5/8) silty clay; many prominent light yellowish brown (2.5Y 6/4) and many faint yellowish red (5YR 5/8) mottles; strong fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; common distinct clay films on all faces of peds; 2 percent rounded gravel; very strongly acid; gradual wavy boundary.
Bt3—53 to 61 inches; yellowish brown (10YR 5/6) clay; common distinct strong brown (7.5YR 5/8) and light yellowish brown (2.5Y 6/4) mottles; strong fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; common

distinct clay films on all faces of peds; 2 percent rounded gravel; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)
Other features: Lithochromic mottles in shades of red, reddish brown, and light yellowish brown may occur below a depth of 30 inches

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent gravel and cobbles

Ap horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam, loam, or silty clay loam
Rock fragments—0 to 15 percent gravel and cobbles

E or EB horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam or loam
Rock fragments—0 to 15 percent gravel and cobbles

BE horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—silt loam, loam, or clay loam
Rock fragments—0 to 15 percent gravel and cobbles

BA horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture (in the fine-earth fraction)—silt loam, loam, or clay loam
Rock fragments—0 to 15 percent gravel and cobbles

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—clay, silty clay, silty clay loam, or clay loam
Rock fragments—0 to 35 percent gravel and cobbles

Udorthents

Physiographic province: Valley and Ridge
Landform: Areas along highways, construction zones, urban areas, or other areas where surface excavations or other land disturbances occur

Parent material: Fill from a variety of sources
Drainage class: Variable
Slowest saturated hydraulic conductivity: Variable
Depth class: Variable
Slope range: 1 to 65 percent

Associated Soils

Udorthents are associated with many soils. Included are any soils that are adjacent to the areas excavated or filled. Associated soils generally have not been covered by more than 20 inches of fill material or have not been deeply mixed by earthmoving equipment.

Typical Pedon

Because of the variability in soil properties, no typical pedon represents Udorthents. Udorthents formed when soils were disturbed by land leveling, excavation, or filling. They consist of loamy and clayey soil material and varying amounts of rock fragments. Depth to hard bedrock ranges from a few inches to more than 5 feet. Areas range from slightly compacted to severely compacted. Unvegetated areas are susceptible to severe erosion. Drainage is variable. Generally, Udorthents are along highways, railyards and tracks, interstates, quarries, and other urban areas that have been excavated or filled.

Watahala Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Gravelly residuum over clayey residuum weathered from cherty limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 55 percent

Associated Soils

- Caneyville soils, which are moderately deep and have a fine particle size; on hills
- Frederick soils, which have a fine particle size; on hills
- McClung soils, which have a fine-loamy particle size; on mountains
- Murrill soils, which have a fine-loamy particle size; on footslopes and toeslopes

Taxonomic Classification

Fine-loamy over clayey, siliceous over mixed, subactive, mesic Typic Paleudults

Typical Pedon

Watahala very gravelly sandy loam in an area of Frederick-Watahala complex, 8 to 15 percent slopes; Alleghany County, Virginia; approximately 3,900 feet south and 11 degrees west of the intersection of Highway US-220 and Highway VA-606, near Warm Springs Mountain, in woodland; Falling Spring, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 53 minutes 42 seconds N. and long. 79 degrees 54 minutes 3 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.
A—1 to 3 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam; moderate fine granular structure; very friable; many very fine, fine, and medium

roots; 2 percent chert cobbles and 38 percent chert gravel; extremely acid; clear smooth boundary.

E—3 to 12 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 5 percent chert cobbles and 20 percent chert gravel; very strongly acid; gradual smooth boundary.

BE—12 to 27 inches; yellowish brown (10YR 5/6) gravelly silt loam; weak medium subangular blocky structure; friable; few fine and medium roots; common fine prominent light yellowish brown (2.5Y 6/4) non-redoximorphic clay depletions on faces of peds; 10 percent chert cobbles and 20 percent chert gravel; very strongly acid; gradual smooth boundary.

Bt1—27 to 37 inches; yellowish brown (10YR 5/6) gravelly loam; moderate medium subangular blocky structure; friable; few fine and medium roots; many distinct clay films on all faces of peds; 10 percent chert cobbles and 20 percent chert gravel; very strongly acid; abrupt smooth boundary.

2Bt2—37 to 54 inches; strong brown (7.5YR 5/6) gravelly clay; common fine distinct light brown (7.5YR 6/4) mottles; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common distinct clay films on all faces of peds; 15 percent chert gravel; very strongly acid; clear smooth boundary.

2Bt3—54 to 61 inches; strong brown (7.5YR 5/6) silty clay; common fine distinct light brown (7.5YR 6/4) mottles; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; common distinct clay films on all faces of peds; 3 percent chert gravel; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Depth to 2Bt horizon: 20 to 50 inches
Reaction: Extremely acid to strongly acid in the upper part of the solum (in unlimed areas) and very strongly acid or strongly acid in the 2Bt horizon

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—sandy loam
Rock fragments—35 to 45 percent gravel and cobbles

Ap horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture (in the fine-earth fraction)—sandy loam, loam, or silt loam
Rock fragments—15 to 45 percent gravel and cobbles

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—15 to 45 percent gravel and cobbles

BE horizon:
Hue—10YR
Value—5 or 6

Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—15 to 45 percent gravel and cobbles

Bt horizon:
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—6 to 8
Texture (in the fine-earth fraction)—silty clay loam, clay loam, loam, or silt loam
Rock fragments—15 to 35 percent gravel and cobbles

2Bt horizon:
Hue—5YR or 7.5YR
Value—4 to 6
Chroma—6 to 8
Texture (in the fine-earth fraction)—clay or silty clay with 25 percent (absolute) more clay than the overlying horizon
Rock fragments—0 to 35 percent gravel and cobbles

Weikert Series

Physiographic province: Valley and Ridge
Landform: Hills and mountains
Parent material: Residuum weathered from shale and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Shallow
Slope range: 8 to 90 percent

Associated Soils

- Berks soils, which are moderately deep; on similar landforms
- Gilpin soils, which are moderately deep and have a fine-loamy particle size; on similar landforms
- Rough soils, which are very shallow; on similar landforms
- Shelocta soils, which are very deep and have a fine-loamy particle size; on footslopes and toeslopes

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

Typical Pedon

Weikert channery silt loam in an area of Weikert-Berks-Rough complex, 35 to 55 percent slopes; Alleghany County, Virginia; approximately 7,500 feet north and 14 degrees east of the intersection of Highway VA-629 and Highway I-64, near Wilson Creek, in woodland; Clifton Forge, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 50 minutes 49 seconds N. and long. 79 degrees 47 minutes 9 seconds W.

Oi—0 to 1 inch; slightly decomposed plant material.
A—1 to 4 inches; dark grayish brown (10YR 4/2) channery silt loam; weak fine granular structure; very friable; many very fine, fine, and medium roots; 20 percent shale channers; strongly acid; gradual wavy boundary.
Bw1—4 to 7 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; many very fine, fine, and medium roots; 35 percent shale channers; strongly acid; gradual wavy boundary.
Bw2—7 to 16 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine

subangular blocky structure; friable; common fine and medium roots; 55 percent shale channers; strongly acid; gradual wavy boundary.
R—16 inches; fissile shale bedrock.

Range in Characteristics

Solum thickness: 8 to 20 inches
Depth to bedrock: 10 to 20 inches
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—15 to 35 percent channers

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—35 to 60 percent channers

C horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 6
Texture (in the fine-earth fraction)—loam or silt loam
Rock fragments—60 to 80 percent channers and flagstones

Wharton Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from shale and siltstone
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 8 to 35 percent

Associated Soils

- Blairton soils, which are moderately deep; on similar landforms
- Gilpin soils, which are well drained and moderately deep; on similar landforms

Taxonomic Classification

Fine-loamy, mixed, active, mesic Aquic Hapludults

Typical Pedon

Wharton silt loam in an area of Wharton-Blairton complex, 15 to 35 percent slopes; Alleghany County, Virginia; approximately 1,900 feet south and 56 degrees east of the intersection of Highway US-220 and Highway VA-18, in the Fairlawn area, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 46 minutes 29 seconds N. and long. 79 degrees 58 minutes 48 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material; very friable; very strongly acid; abrupt smooth boundary.

A—1 to 3 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; very friable; many very fine and fine roots; 2 percent shale channers; very strongly acid; clear smooth boundary.
BE—3 to 8 inches; 75 percent yellowish brown (10YR 5/4) and 25 percent very dark grayish brown (10YR 3/2) silt loam; weak fine subangular blocky structure; very friable; many very fine and fine roots; 2 percent shale channers; very strongly acid; clear smooth boundary.
Bt1—8 to 21 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; very friable, slightly sticky, moderately plastic; common very fine and fine roots; few faint clay films on all faces of peds; 2 percent shale channers; very strongly acid; clear smooth boundary.
Bt2—21 to 37 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; very friable, slightly sticky, moderately plastic; common very fine and fine roots; few faint clay films on all faces of peds; common fine distinct strong brown (7.5YR 5/8) masses of oxidized iron; many fine prominent light brownish gray (2.5Y 6/2) and light gray (2.5Y 7/2) iron depletions; 2 percent shale channers; very strongly acid; gradual smooth boundary.
Bt3—37 to 44 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; very friable, slightly sticky, moderately plastic; few very fine and fine roots; few faint clay films on all faces of peds; many fine prominent strong brown (7.5YR 5/8) masses of oxidized iron; many fine distinct light brownish gray (10YR 6/2) iron depletions; 2 percent shale channers; very strongly acid; gradual smooth boundary.
BCg—44 to 62 inches; gray (10YR 6/1) silty clay loam; weak fine subangular blocky structure; very friable, slightly sticky, slightly plastic; few very fine and fine roots; many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; 5 percent shale channers; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to bedrock: 40 to 72 inches or more
Reaction: Extremely acid to strongly acid (in unlimed areas)

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 15 percent channers

Ap horizon (if it occurs):
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture (in the fine-earth fraction)—silty clay loam or silt loam
Rock fragments—0 to 15 percent channers

BE horizon:
Hue—10YR or 7.5YR
Value—3 to 6
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam or silty clay loam
Rock fragments—0 to 20 percent channers

Bt horizon:
Hue—7.5YR to 10YR

Value—5 or 6
Chroma—2 to 6
Texture (in the fine-earth fraction)—typically silty clay loam; subhorizons of silty clay or clay occur in some pedons
Rock fragments—0 to 20 percent channers

BC horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture (in the fine-earth fraction)—silt loam, silty clay loam, or clay loam
Rock fragments—5 to 50 percent channers

BCg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture (in the fine-earth fraction)—silt loam, silty clay loam, or clay loam
Rock fragments—5 to 50 percent channers

C or Cg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam or silty clay loam
Rock fragments—20 to 50 percent channers

Wolfgap Series

Physiographic province: Valley and Ridge
Landform: Floodplains in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Coursey soils, which are moderately well drained and do not have a mollic epipedon; on low stream terraces
- Gladehill soils, which have a coarse-loamy particle size; on similar landforms
- Ogles soils, which have a loamy-skeletal particle size and do not have a mollic epipedon; on similar landforms

Taxonomic Classification

Fine-loamy, siliceous, active, mesic Fluventic Hapludolls

Typical Pedon

Wolfgap loam, 0 to 3 percent slopes, protected; Alleghany County, Virginia; approximately 4,000 feet north and 32 degrees west of the intersection of Highways VA-18 and VA-657, near Edgemont, in woodland; Covington, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 45 minutes 43 seconds N. and long. 79 degrees 59 minutes 50 seconds W.

A1—0 to 11 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR

5/2) dry; moderate medium granular structure; very friable; common very fine and fine and few medium roots; slightly acid; clear smooth boundary.

A2—11 to 18 inches; dark brown (10YR 3/3) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; very friable; common very fine and fine and few medium roots; common faint silt coats on all faces of peds; slightly acid; gradual smooth boundary.

Bw1—18 to 30 inches; dark yellowish brown (10YR 3/4) loam; moderate medium subangular blocky structure; very friable; few very fine and fine roots; many faint silt coats on all faces of peds; slightly acid; gradual smooth boundary.

Bw2—30 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; very friable; slightly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to bedrock: More than 60 inches
Reaction: Slightly acid to neutral (in unlimed areas)

A or Ap horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture (in the fine-earth fraction)—loam
Rock fragments—0 to 15 percent gravel and cobbles

Bw horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture (in the fine-earth fraction)—loam, sandy clay loam, clay loam, or silt loam
Rock fragments—0 to 35 percent gravel and cobbles

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture (in the fine-earth fraction)—sandy loam, fine sandy loam, loamy sand, loam, silt loam, sandy clay loam, or clay loam
Rock fragments—15 to 80 percent gravel and cobbles

Zoar Series

Physiographic province: Valley and Ridge
Landform: High stream terraces in a river valley
Parent material: Alluvium derived from sandstone and shale
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 3 to 8 percent

Associated Soils

- Cottonbend soils, which are well drained and have a fine-loamy particle size; on similar landforms
- Coursey soils, which have a fine-loamy particle size; on low stream terraces
- Sugarhol soils, which are well drained; on similar landforms

- Nicelytown soils, which are moderately well drained and have a fine-loamy particle size; on similar landforms
- Purdy soils, which are poorly drained; on low to high stream terraces

Taxonomic Classification

Fine, mixed, semiactive, mesic Aquic Hapludults

Typical Pedon

Zoar silt loam, 3 to 8 percent slopes; Alleghany County, Virginia; approximately 5,800 feet south and 25 degrees west of the intersection of Highways VA-159 and VA-665, near Peters Mountain, in a corn field; Callaghan, Virginia USGS 7.5 Minute Quadrangle; lat. 37 degrees 46 minutes 26 seconds N. and long. 80 degrees 6 minutes 41 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable; common very fine and fine roots; 2 percent rounded sandstone gravel; moderately acid; clear smooth boundary.

BE—8 to 15 inches; light yellowish brown (10YR 6/4) silt loam; moderate medium subangular blocky structure; very friable; few very fine and fine roots; 10 percent krotovinas (volume percent); 2 percent rounded sandstone gravel; moderately acid; gradual smooth boundary.

Bt1—15 to 29 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; common distinct silt coats and many distinct clay films on all faces of peds; 2 percent rounded sandstone gravel; very strongly acid; gradual smooth boundary.

Bt2—29 to 37 inches; 60 percent light yellowish brown (10YR 6/4) and 40 percent pale brown (10YR 6/3) silty clay loam; strong medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; many distinct clay films on all faces of peds; common fine prominent brownish yellow (10YR 6/8) masses of oxidized iron and common fine distinct light brownish gray (10YR 6/2) iron depletions; 2 percent rounded sandstone gravel; very strongly acid; clear smooth boundary.

Bt3—37 to 42 inches; brownish yellow (10YR 6/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; many distinct clay films on all faces of peds; many fine prominent light brownish gray (10YR 6/2) iron depletions; 2 percent rounded sandstone gravel; strongly acid; gradual smooth boundary.

BCg—42 to 50 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; many medium prominent yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of oxidized iron; 2 percent rounded sandstone gravel; very strongly acid; clear smooth boundary.

C—50 to 60 inches; light yellowish brown (10YR 6/4) and brownish yellow (10YR 6/6) silty clay loam; massive; friable, moderately sticky, moderately plastic; few very fine and fine roots; many medium distinct light brownish gray (10YR 6/2) iron depletions and yellowish brown (10YR 5/6) masses of oxidized iron; 2 percent rounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 50 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid (in unlimed areas)

Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture (in the fine-earth fraction)—silt loam
Rock fragments—0 to 3 percent gravel and cobbles

BE horizon:
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture (in the fine-earth fraction)—silt loam or silty clay loam
Rock fragments—0 to 3 percent gravel and cobbles

Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 3 percent gravel and cobbles

BCg horizon:
Hue—10YR
Value—5 or 6
Chroma—1 or 2
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 3 percent gravel and cobbles

C horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 6
Texture (in the fine-earth fraction)—silty clay loam, silty clay, or clay
Rock fragments—0 to 15 percent gravel and cobbles

Formation of the Soils

In this section, the factors and processes that have affected the formation and morphology of the soils in Alleghany County are described. The geology of the survey area is also discussed.

Factors of Soil Formation

Soils are intimate mixtures of broken and partly or completely weathered rock, minerals, organic matter, living plants and animals, water, and air. They occur as part of the natural landscape and differ from place to place. Some of the ways in which they differ are in occurrence and degree of development of various horizons, in mineral content, in depth over bedrock, and in texture, color, and slope. The characteristics of the soils at any given area depend on the interaction of five soil-forming factors—parent material, climate, living organisms, topography, and time. Over time, topography modifies the effect of climate and living organisms on parent material *(9)*.

In theory, if all of the soil-forming factors were identical at different sites, the soils at these sites would be identical. These factors influence the genesis of every soil, but their relative importance varies from place to place. One factor may outweigh others in the formation of a soil and may determine most of its properties. For example, a very young floodplain soil may have only faint soil horizonation because of the short time the soil-forming factors have had to work. In contrast, a soil formed in residuum from bedrock on a stable landscape may have distinct horizons. The horizons of this soil are distinct because the soil material has remained largely in place and all of the soil-forming factors have been active for a long time. In general, however, the combined action of the five factors determines the character of each soil. The interaction of the five factors of soil formation is more complex for some soils than for others.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It is a product of weathering, or decomposition, of underlying bedrock or transported materials. Parent material influences the chemical, mineral, and textural composition of the soil. In the early stages of soil formation, a soil has properties similar to those of the parent material. As weathering takes place, the soil properties are modified and each soil develops its own characteristics. In Gilpin and Alticrest soils, parent material determines the mineral and textural composition. Gilpin soils formed in material weathered mainly from shale. Alticrest soils formed in material weathered mainly from coarse-grained sandstone. Gilpin soils have more weatherable minerals and more clay than Alticrest soils. Gilpin soils have a mixed mineralogy and are fine-loamy; Alticrest soils have a siliceous mineralogy and are coarse-loamy.

The general types of parent material in Alleghany County are residuum, colluvium, and alluvium. Residual material weathered in place from the underlying bedrock. Colluvial material was moved by gravity from ridges and the upper slopes and then deposited on the lower slopes. Alluvial material was deposited on floodplains and terraces by streams.

Residuum

Most of the soils in Alleghany County formed in residual material weathered from sandstone, shale, siltstone, or limestone bedrock. This residuum is some of the oldest parent material in the county. Some of the soils that have formed in this residuum, such as Frederick soils, show a high degree of development. In other soils, however, the effects of the soil-forming processes have been limited by rock that is resistant to weathering or by the slope. Dekalb soils formed in residuum from hard sandstone and have a very limited degree of development.

Colluvium

Some material has moved downslope from the residual soils. This colluvial material is on lower backslopes, footslopes, and toeslopes; at the head of drainageways; and along drainageways. In general, it is younger than the residuum, but the soil-forming processes have had a considerable amount of time to work. The resulting soils, such as Oriskany soils, have an accumulation of clay in the subsoil. Other colluvial soils, such as Escatawba soils, are in geomorphically younger landscape positions but formed in parent material which is actually very old. Escatawba soils are very strongly leached and have a clay pan. This clay pan is dense and mottled and has moderately slow permeability. A seasonally high water table is perched over the clay pan.

Alluvium

The alluvial material on terraces and floodplains has been washed from soils that formed in residual and colluvial material. Although they make up only a small acreage in the county, soils that formed in alluvial material are significant both agriculturally and residentially. The soils on the terraces, such as Cottonbend soils, are much older than the soils on the floodplains, are strongly leached, and have a moderately well developed profile. The soils on the floodplains, such as Wolfgap soils, are the youngest soils in the county and exhibit a weakly developed profile.

Climate

Climate affects the physical, chemical, and biological relationships in soils, mainly through the influence of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports minerals and organic residue through the soil. Temperature determines the type and rate of physical, chemical, and biological activities occurring in the soil. Weathering is more rapid in a warm, humid climate than in a cold or dry climate.

Because precipitation in Alleghany County exceeds evapotranspiration, the soils have been intensively leached. Much of the soluble materials that originally were present or were released through weathering have been removed, except in alluvial areas, which are recharged with eroded sediments from surrounding uplands. Although the bedrock in some areas contains calcium, free carbonates of lime have not accumulated in the soils because of leaching. Most of the soils in the survey area are acid.

Precipitation is the main factor in the formation of the subsoil that characterizes most of the soils in Alleghany County. In addition to leaching soluble materials, water that percolates through the soil moved clay from the surface layer to the subsoil. Except for soils that formed in recent alluvium or sand or on very steep slopes, all the soils in the county typically are more clayey in the subsoil than in the surface layer.

The formation of blocky structure in the subsoil of well developed soils, such as Frederick soils, is also influenced by climate. The development of peds, or aggregates, in the subsoil is caused partly by changes in volume of the soil mass which are mainly the result of alternating periods of wetting and drying. Plentiful moisture also supports

a productive forest. A moderate content of humus in the surface layer develops after large amounts of organic material have been returned to the soil.

Climate varies locally due to differences in the degree and direction of slope and elevation. Generally, soils on steep uplands facing south are drier than soils on similar landscapes facing north. Soils that form in these areas may differ even if they both have the same parent material. At the higher elevations in mountainous areas, the climate may be cooler, the precipitation, particularly snowfall, is greater, and fogs are more common. In these higher, cooler areas, soils may be slightly darker and contain slightly more organic matter than soils at the lower elevations. In the higher areas, the weathering of parent materials is slower and the soils generally are thinner than soils at the lower elevations.

Precipitation and temperature are relatively uniform throughout most of the county. However, small areas located at the highest elevations, such as Bald Knob at the summit of Warm Springs Mountain, have a lower mean temperature than the rest of the county. Although not mapped, inclusions of frigid soils, or those that have a mean annual soil temperature of below 47 degrees F, occur at the highest elevations. Mesic soils, or those that have a mean annual soil temperature of 47 to 59 degrees F, are mapped throughout the county. The climate of the survey area is discussed further in the section “General Nature of the Survey Area.”

Living Organisms

Biologic forces are important in the formation of soils in Alleghany County. Trees, shrubs, grasses, and other herbaceous plants, as well as microorganisms, earthworms, and other plant and animal life, are active agents in the soil-forming process. Climate, parent material, relief, age of the soil, and other environmental factors determine the kinds of plants and animals that live on and in the soil. Where climate or vegetation varies significantly, the soils vary accordingly.

Plants supply organic matter and transfer moisture and plant nutrients from the lower horizons to the upper horizons. Organic matter decomposes and is mixed into the soil by microorganisms and earthworms or by chemical reactions. In Alleghany County, the rate of decomposition is fairly rapid because of favorable temperatures, the generally abundant amount of soil moisture, and the kinds of microorganisms in the soil. Organic matter content in the soil is low or moderate and generally ranges from 1 to 3 percent, by volume, in the surface layer.

Originally, the vegetation in Alleghany County was dense forest of hardwoods or mixed hardwoods and pine. The density of the stands, the proportion of different species, and the kinds of ground cover varied to some extent. The forests are not likely the reason for all of the differences in soil properties throughout the county. The leaves of deep-rooted deciduous trees vary in content of plant nutrients, but they generally return more bases and phosphorus to the soils than coniferous trees. The litter of conifers, rhododendron, and mountain laurel produces more organic acids than that of maple and oak. Soils that form under layers of acid-forming leaf litter tend to be more highly leached than other soils, and they commonly have a very low base saturation. The layer of leaf litter also helps to recycle nutrients, reduces the depth of frost penetration, increases moisture retention, and reduces the hazard of erosion on steep slopes.

As agriculture developed in Alleghany County, human activities, such as the clearing of forests and the introduction of new kinds of plants, influenced soil formation. Cultivation, artificial drainage, and liming and fertilizing changed some soil characteristics. Human activities have also caused accelerated erosion. Because of this erosion, the soil in many areas is thinner and vegetation is difficult to establish. Some soil material has been washed from sloping areas down to depressions and

floodplains. Young, or immature, soils, such as Wolfgap soils, formed in this washed material.

Topography

Topography, or lay of the land, affects the formation of soils by causing differences in internal drainage, surface runoff, soil temperature, and geologic erosion. Topography also affects the rate at which the soils absorb radiant energy. This absorption rate, in turn, affects native vegetation. Topography alters the effect of parent material on soil formation; thus, several different kinds of soils can form from the same kind of parent material.

Slopes in Alleghany County range from nearly level to very steep. In the steeper areas, runoff is rapid, only a small amount of water percolates through the soil, the movement of clay and the translocation of bases are slight, and soil material erodes as rapidly as it forms. Aspect varies greatly in these areas, affecting vegetation and soil formation. South-facing slopes are generally drier than north-facing slopes, and soils on these slopes retain less moisture. Berks, Weikert, and Alticrest soils formed in the steeper areas.

In the gently sloping and strongly sloping areas, the soils are generally well drained and slightly eroded. The soils in such areas are mature, having well defined horizons. Frederick and Poplimento soils are examples. Low-lying, flat areas or depressions are wetter and often ponded because of restricted drainage. Soils on colluvial slopes or within drainageways often receive runoff from nearby uplands. Lateral underground seepage from the higher areas is fairly common. Carbonates or other bases in the ground water may influence the soils. The soils on convex slopes are generally better drained. The soils on concave slopes tend to accumulate both runoff and water from internal drainage. Shelocta soils are an example of well drained soils on convex, colluvial slopes. Escatawba soils are an example of well drained soils on concave, colluvial slopes.

Time

The length of time that the parent material has been exposed to soil-forming processes influences the kind of soil that forms. The youngest soils in Alleghany County, such as Dunning, Purdy, and Wolfgap soils, formed in recent alluvium on floodplains. These soils may be stratified and have weakly expressed horizons because the soil-forming processes are interrupted by each new deposition during flooding.

Old, strongly developed soils show well defined genetic horizons. Young, less developed soils show only faint or weakly developed horizons. The soils of Alleghany County range from young soils on floodplains to old soils on smooth uplands.

In steep and very steep areas, either creep and washing move soil material or solifluction mixes soil material before it has sufficient time to develop a deep soil profile. As a result, shallow and weakly developed soils, such as Rough and Weikert soils, are common on steep slopes.

Morphology of the Soils

The interaction of soil-forming factors results in distinguishable layers, or horizons, in a soil profile. The soil profile extends from the surface of the soil down to materials that are little altered by the soil-forming processes. The five major horizons that occur in the soils in Alleghany County are the O, A, E, B, and C horizons.

The *O horizon* is a very dark, organic horizon that forms above the mineral soil. In Alleghany County, O horizons occur almost exclusively in forested soils. They result

mainly from the decomposition of hardwood leaf litter and are quickly destroyed by activities such as land clearing and plowing.

The *A horizon* is a mineral surface layer which has been darkened by the accumulation of organic matter. Wolfgap and Gladehill soils have thick, dark A horizons.

The *E horizon* is an eluvial horizon which has been leached of clay, iron, and aluminum. Typically, it is a light-colored layer composed of resistant materials, such as sand- and silt-sized quartz. Although this horizon does not occur in all soils, it is distinct in sandy or loamy forest soils. Alticrest and Dekalb soils typically have well expressed E horizons.

The *B horizon* is an illuvial horizon which has an accumulation of clay, iron, aluminum, and other compounds leached from the A and E horizons. In Alleghany County, soils with layers of clay accumulation, or Bt horizons, are common in the limestone valley and on old river terraces. Faywood and Sugarhol soils have well developed Bt horizons. On the steeper mountain sideslopes, less developed layers, or Bw horizons, commonly form. These horizons generally have weak blocky structure and are brighter in color than the overlying horizons. Berks and Lehew soils have Bw horizons.

The *C horizon* consists of the parent material of the soil. It is material that has been modified by weathering but only slightly altered by the soil-forming processes. It generally does not have structure and contains few, if any, roots.

Many processes have been involved in the formation of soil horizons in the survey area. These processes include the accumulation of organic matter, the leaching of soluble salts, the reduction and transfer of iron, the formation and translocation of clay minerals, and the formation of soil structure. In most soils, these processes have been taking place for thousands of years.

Most of the well drained or moderately well drained soils on uplands have a yellowish brown to yellowish red B horizon. These colors are mainly caused by the presence of iron oxides. Zones of gray colors where iron has been reduced and transferred occur in the B horizons of moderately well drained soils. Reoxidized iron produces red, yellowish red, strong brown, or yellowish brown colors in areas that are oxygenated. Nicelytown soils exhibit a mottled pattern with these colors.

Somewhat poorly drained to very poorly drained soils commonly have layers of gray colors. These colors are the result of gleying, a process of intense reduction of iron during soil formation. Purdy soils exhibit these colors.

The weathering of primary minerals in order to form silicate clay minerals, largely through hydrolysis, commonly occurs in the soils of Alleghany County. Through this process, clay minerals such as kaolinite, vermiculite, and, to a lesser extent, smectite form. These clay minerals are translocated through the soil profile and commonly result in heavy, clayey subsoils. The soils in the survey area typically do not have one type of clay mineral that is dominant. The soils are a mixture of clay minerals.

Processes of Horizon Differentiation

Soils are formed as the result of the physical and chemical weathering of parent rocks and organic material, the transfer of materials, the transformation of materials, and the gains and losses of organic matter and minerals.

Soil formation begins with the physical weathering of rocks. Frost action, expansion, contraction, and other forces break large pieces of rock into smaller pieces. The rocks and rock fragments are further reduced to sand-, silt-, and clay-sized particles. These particles form the unconsolidated material in which plants can grow. When plants and animals die, organic matter is added to the mineral material.

Materials commonly are transferred from one part of the soil to another. Organic matter in suspension is moved from the surface layer to the subsoil. Calcium and other

elements are leached from the surface layer. To some extent, the clay in the subsoil or in the substratum holds these elements, but percolating ground water also leaches some elements from the soil. In addition, percolating water transfers clay from the upper horizons to the lower horizons.

The roots of plants absorb bases and store them in stems, leaves, and twigs. When plants die and decay, they return these elements to the soil. In most soils in the county, the translocation and development in place of clay minerals have strongly influenced the development of soil horizons. As the soil develops, horizons gradually develop recognizable characteristics that make one horizon distinguishable from another.

The accumulation and incorporation of organic matter takes place with the decomposition of plant residue. Organic matter darkens the surface layer and helps to form the A horizon. In many places much of the surface layer has been eroded away or has been mixed with materials from underlying layers through cultivation. Replacing lost organic matter normally takes a long time. In Alleghany County, the organic matter content of the surface layer is low in Frederick and Weikert soils, medium in Alonzville soils, and high in Massanetta soils.

Some lime and soluble salts must be leached from soils before both the translocation of clay minerals and the formation of a distinct subsoil can occur. Factors that affect leaching include the kind of original salts present in the soils, the depth to which the soil solution percolates, and the texture of the soils.

One example of a transformation is the reduction and solubilization of ferrous iron. This change takes place under wet, saturated conditions in which water replaces molecular oxygen. It mainly occurs in soils that are not well drained. Gleying, or the reduction of iron, is evident in Dunning and Purdy soils, which have a dominantly gray subsoil. The gray color indicates the transformation of iron to the ferrous form and implies wetness. Reduced iron, which is soluble and mobile, commonly has been moved short distances in the soils in Alleghany County. It has accumulated either in the horizon where it originated or in an underlying horizon. It can be partly reoxidized and segregated in the form of stains, concretions, or bright yellow and red redoximorphic features.

Geology and Soil Relationships

Soils and geology in Alleghany County are directly related. The soils inherited their properties from the underlying geologic strata. The weathered bedrock has formed soils unique to each geologic formation. Table 21 shows which soils occur on each geologic formation in the county.

The landforms of Alleghany County clearly show the effects of uplift, folding, and geologic erosion. The relative resistance of various rocks to erosion and folding have affected the topography in the county. Mountain summits are anticlinal, synclinal, and monoclinal, and many are capped with harder, more resistant sandstone and quartzite. Mountain valleys are anticlinal, synclinal, and monoclinal, and most are underlain by softer, less resistant shale and limestone *(12)*.

The survey area is in the Valley and Ridge physiographic province. The bedrock is steeply folded into anticlines and synclines and is faulted. The ridges and valleys in the county are generally oriented in a northeast to southwest direction. The rocks are of Mississippian, Devonian, Silurian, or Ordovician age. The rock strata include numerous geologic formations ranging in age from the Maccrady shale and the Pocono Formation of the lower Mississippian System to the Beekmantown Formation of the lower Ordovician System.

Surficial deposits from the Quaternary System include alluvial floodplains and terrace sediments as well as colluvial deposits. These transported materials are the youngest in the county and are the building blocks for a variety of soils, both young and old.

The floodplain soils include Ogles, Wolfgap, and Gladehill, which formed in alluvium derived from sandstone and shale materials. They all formed near present-day streams, such as the Jackson and Cowpasture Rivers or Potts and Dunlap Creeks. Other floodplain soils include Massanetta and Dunning, which formed in limestone and travertine marl deposits. These soils occur in just two areas of the county—an area along Sweet Springs Creek near Sweet Chalybeate and an area above Falling Spring Falls in Falling Spring Valley. All floodplain soils are relatively young because fresh deposits of material occur regularly.

The alluvial terrace soils include the rarely flooded Alonzville and Coursey soils on low stream terraces and Sugarhol, Cottonbend, Zoar, Purdy, and Nicelytown soils on middle to high stream terraces. These soils formed in alluvium adjacent to the rivers and creeks. The oldest alluvial soils occur at the higher elevations, above the present-day floodplains.

The colluvial soils are scattered throughout the county along drainageways and on footslopes and toeslopes. They may also occur on slightly concave backslopes. Oriskany soils formed dominantly from sandstone materials and primarily occur in drainageways. Shelocta and Macove soils formed dominantly from shale materials and also occur in drainageways. Murrill soils formed over limestone and occur on footslopes and toeslopes and in drainageways. Escatawba soils formed from sandstone, shale, and limestone materials and occur on footslopes and toeslopes. Colluvial soils vary in age according to the stability of their landform position.

The Maccrady shale and the Pocono Formation occur in small areas in the western part of the county and consist of red shale and grayish brown sandstone conglomerate (found only on a few ridgetops near the West Virginia State line). Common residual soils occurring on the Maccrady shale include Lehew and Berks soils. Alticrest, Dekalb, and Lily soils are common on the Pocono Formation. Oriskany soils formed in colluvium from these formations.

The Hampshire Formation consists of interbedded red and brown shale and brown sandstone and occurs on several side slopes and ridgetops in the western part of the county. Berks, Lehew, and Dekalb soils are common residual soils on this formation. Oriskany soils formed in colluvium on this formation.

The Chemung Formation consists of interbedded olive and olive brown shale, mudstone, and fine-grained sandstone and occurs extensively on side slopes and ridgetops in the western part of the county. It extends eastward to Dameron, Brushy, and Oliver Mountains and contains many shell fossils. Residual soils on this formation include Berks, Weikert, and Rough soils. Macove and Shelocta soils formed in colluvial positions on this formation.

The Brallier Formation consists of brown to olive brown interbedded shale, siltstone, and fine-grained sandstone. It covers large areas in the valleys and on side slopes in the central and eastern portions of the county. Berks, Weikert, Rough, and Gilpin soils are common in residual positions on this formation. Shelocta and Escatawba soils formed in colluvium on this formation.

The Millboro shale consists of a black, brown, and reddish brown fissile shale and covers small areas in the central and eastern portions of the county. Berks, Weikert, Rough, and Gilpin soils occur on residual side slopes and ridgetops on this shale. Escatawba and Shelocta soils occur on colluvial footslopes and toeslopes and in drainageways in areas of this shale.

The Needmore shale consists of an olive green to gray shale and occurs in the central and eastern parts of the county. It is of limited extent due to relatively thin bedding. Common residual soils on this shale include Blairton, Wharton, Berks, and Gilpin. Shelocta and Escatawba soils formed in colluvium on this shale.

The Ridgeley (Oriskany) sandstone consists of a medium- to coarse-grained, thick-bedded, soft to hard, brown to reddish-brown sandstone. Fresh fractures are white, and the sandstone is commonly calcareous unless weathered. This sandstone covers

small scattered areas along the lower flanks of the large anticlinal ridges, such as Warm Springs, Peters, and North Mountains, as well as the lower ridges, such as Morris Hill and Lick Mountain. Alticrest, Lily, Dekalb, and McClung soils are the most common residual soils on this formation. Common colluvial soils on this formation include Oriskany and Murrill soils and, to a lesser extent, Escatawba soils.

The Helderberg Group, Tonoloway Formation, Wills Creek Formation, and McKenzie Formation consist of interbedded limestone and sandstone. Some areas are cherty, and large fossils are common in the limestone. The soils on these formations are similar to those on the Ridgeley sandstone, except that the soils tend to be more clayey and less acid. Lily, Dekalb, McClung, Watahala, Frederick, and Caneyville soils are common in these areas. In many places, however, these soils are buried by colluvium because the formations commonly occupy saddles and drainageways that are prone to collecting materials from higher positions upslope. Colluvial soils in areas of these formations include Oriskany and Murrill soils.

The Keefer sandstone consists of a tan to pinkish white, medium- and fine-grained, quartzose sandstone that is resistant to weathering. It commonly forms cliffs or steep side slopes on the middle to upper flanks of all the sandstone mountains. Alticrest and Dekalb soils formed in these residual areas. Oriskany soils formed in colluvium in areas of this sandstone.

The Rose Hill Formation consists of interbedded red sandstone and red and brown shale and commonly occurs on the upper flanks of the sandstone mountains. Berks, Lehew, and Dekalb soils formed in residuum on this formation, and Oriskany soils formed in colluvium.

The Tuscarora (Clinch) Formation consists of a hard quartzose sandstone that is very resistant to weathering. It typically occurs along the ridges of all the large sandstone mountains in Alleghany County. It is typically pinkish white to gray and outcrops in several areas. Dekalb and Alticrest soils are residual soils on this formation, and the very rubbly Oriskany soils are colluvial soils that formed downslope.

The Juniata Formation occurs on the upper flanks of the limestone valleys of Falling Spring, Snake Run, and Rich Patch. It consists of interbedded red and brown sandstones and shales. Berks, Lehew, and Dekalb soils are common residual soils on this formation. Oriskany soils occur on colluvial slopes and in drainageways on this formation.

The Martinsburg Formation consists of a yellowish brown shale (in the upper part) and a yellowish brown limey shale (in the lower part). It occurs on the middle to lower flanks of the limestone valleys of Falling Spring, Snake Run, and Rich Patch. Berks and Weikert soils formed on the upper residual slopes. Poplimento and Faywood soils formed on residual slopes lower in the valley. Common colluvial soils on this formation are Oriskany and Murrill soils.

The Edinburg and Lincolnshire Formations and the New Market limestone make up the Middle Ordovician limestones. Either the individual members are thin or little variation in the soils is evident in the field. All formations in this group consist of light to dark gray limestones that are exposed in the bottom of the limestone valleys of Falling Spring, Snake Run, and Rich Patch. Residual soils on these formations include Caneyville and Frederick soils, and common colluvial soils are Oriskany and Murrill soils.

The oldest formation in Alleghany County is the Beekmantown Formation. This formation occurs in the bottom of Falling Spring, Snake Run, and Rich Patch valleys and has only limited exposure. It consists of cherty dolomite with minor limestone beds, and its cherty character makes it resistant to weathering. Common residual soils on this formation are Watahala, Frederick, and Caneyville soils. Oriskany and Murrill soils formed in colluvium on this formation.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A floodplain landform; an extensive, marshy or swampy, depressed area of floodplains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at

breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. An informal term loosely applied to various portions of a floodplain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. It was first standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Concretions. See Redoximorphic features.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material that is transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse-grained, clastic sedimentary rock composed of rounded or

subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Crusts, soil. Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. It is computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Earthy fill. See Mine spoil.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as floodplains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan (alluvial). A generic term for constructional landforms that are built of stratified alluvium with or without debris-flow deposits and that occur on the pediment slope, downslope from their source of alluvium.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest floodplain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very

flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flooding frequency class. Flooding frequency class indicates the number of times flooding can occur over a certain period of time. The classes of flooding are defined as follows:

None.—There is no reasonable possibility of flooding. There is a near 0 percent chance of flooding in any year, or flooding occurs less than 1 time in 500 years.

Very rare.—Flooding is very unlikely but possible under extremely unusual weather conditions. There is a less than 1 percent chance of flooding in any year, or flooding occurs less than 1 time in 100 years but at least 1 time in 500 years.

Rare.—Flooding unlikely but possible under unusual weather conditions. There is a 1 to 5 percent chance of flooding in any year, or flooding occurs nearly 1 to 5 times in 100 years.

Occasional.—Flooding is expected infrequently under usual weather conditions. There is a 5 to 50 percent chance of flooding in any year, or flooding occurs more than 5 times to 50 times in 100 years.

Frequent.—Flooding is likely to occur often under usual weather conditions. There is a more than a 50 percent chance of flooding in any year but a less than a 50 percent chance of flooding in all months in any year, or flooding occurs more than 50 times in 100 years.

Very frequent.—Flooding is likely to occur very often under usual weather conditions. There is a more than a 50 percent chance of flooding in all months of any year.

Floodplain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Floodplain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, floodplain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Floodplain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the floodplain.

Floodplain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. It may occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Foothills. A region of steeply sloping hills that fringes a mountain range or high plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a

higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. It conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or

lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net

irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Landslide. A general, encompassing term for most types of mass movement

landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the floodplain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high

base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Mudstone. A blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal. It is also a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is mainly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower-lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.
Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.
Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.
Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.
Redoximorphic concentrations. See Redoximorphic features.
Redoximorphic depletions. See Redoximorphic features.
Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features. The redoximorphic features are defined as follows:

1. *Redoximorphic concentrations.*—These are zones of apparent accumulation of iron-manganese oxides and include nodules and concretions, masses, and pore linings. *Nodules and concretions* are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure. *Masses* are noncemented concentrations of substances within the soil matrix. *Pore linings* are zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. *Redoximorphic depletions.*—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both

iron-manganese oxides and clay have been stripped out. They include iron depletions and clay depletions. *Iron depletions* are zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix. *Clay depletions* are zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. *Reduced matrix.*—This is a soil matrix that has low chroma in situ but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by a concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, floodplain steps, or other stepped landforms; commonly a recurring part of a series of natural, step-like landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturated hydraulic conductivity (K_{sat}). The amount of water that would move vertically through a unit area of saturated soil in unit time under unit hydraulic gradient. Terms describing saturated hydraulic conductivity, measured in inches per hour (micrometers per second), are as follows:

Very low	0.0 to 0.001417 (0.0 to 0.01)
Low	0.001417 to 0.01417 (0.01 to 0.1)
Moderately low	0.01417 to 0.1417 (0.1 to 1.0)
Moderately high	0.1417 to 1.417 (1.0 to 10)
High	1.417 to 14.7 (10 to 100)
Very high	more than 14.7 (more than 100)

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is dominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which the amount of silt is more than that of clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	3 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 35 percent
Steep	35 to 55 percent
Very steep	55 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorted rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned floodplain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A step-like surface, bordering a valley floor or shoreline, that represents the former position of a floodplain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion. Terraces susceptible to flooding are subdivided as a *low stream terrace*, which is susceptible to flooding, and a *high stream terrace*, which is not susceptible to flooding.

Terracettes. Small, irregular step-like forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, floodplain steps, or other stepped landforms; commonly a recurring part of a series of natural step-like landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the floodplain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth’s surface that are caused by atmospheric or biologic agents or by circulating surface waters but that involve essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1961-90 at Covington, Virginia)

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temp. higher than--	Temperature: 2 years in 10 will have-- Minimum temp. lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	44.6	22.5	33.6	69	-5	49	2.19	1.26	3.02	5	5.1
February-	49.2	25.0	37.1	75	2	77	2.32	1.19	3.31	5	3.0
March----	60.2	32.7	46.4	84	12	238	2.90	1.75	3.93	7	1.0
April----	70.0	39.9	54.9	90	21	449	2.83	1.57	3.95	6	0.3
May------	78.3	48.6	63.5	92	29	723	3.67	2.15	5.02	7	0.0
June-----	84.0	56.4	70.2	95	39	904	3.25	1.76	4.57	6	0.0
July-----	87.3	60.9	74.1	98	45	1,053	3.75	2.54	4.85	7	0.0
August---	86.2	60.0	73.1	97	44	1,025	3.45	1.87	4.85	6	0.0
September	80.0	53.6	66.8	93	33	792	2.77	1.11	4.17	5	0.0
October--	70.5	41.7	56.1	86	21	500	3.38	1.62	4.89	5	0.4
November-	59.3	33.8	46.5	80	14	230	2.94	1.43	4.24	5	0.5
December-	48.5	26.4	37.4	73	1	85	2.54	1.24	3.66	5	3.3
Yearly:											
Average	68.2	41.8	55.0	---	---	---	---	---	---	---	---
Extreme	102	-19	---	99	-7	---	---	---	---	---	---
Total--	---	---	---	---	---	6,125	35.99	29.03	40.53	69	13.6

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Covington, Virginia)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 17	May 2	May 14
2 years in 10 later than--	Apr. 12	Apr. 27	May 10
5 years in 10 later than--	Apr. 2	Apr. 18	May 2
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 16	Oct. 3	Sept. 26
2 years in 10 earlier than--	Oct. 22	Oct. 9	Oct. 1
5 years in 10 earlier than-	Nov. 3	Oct. 19	Oct. 9

Table 3.—Growing Season

(Recorded in the period 1961-90 at Covington, Virginia)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	189	163	143
8 years in 10	197	170	149
5 years in 10	213	183	160
2 years in 10	228	196	171
1 year in 10	237	203	176

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1A	Alonzville loam, 0 to 3 percent slopes, rarely flooded	2,050	0.7
2A	Alonzville loam, 0 to 3 percent slopes, protected	201	*
3C	Alticrest-Dekalb complex, 8 to 15 percent slopes, very stony	303	0.1
4D	Berks channery silt loam, 15 to 35 percent slopes	927	0.3
4E	Berks channery silt loam, 35 to 55 percent slopes	3,282	1.1
5C	Berks-Weikert complex, 8 to 15 percent slopes	787	0.3
6F	Berks-Weikert complex, 55 to 80 percent slopes	1,087	0.4
7D	Berks-Weikert complex, 15 to 35 percent slopes, very stony	809	0.3
7E	Berks-Weikert complex, 35 to 55 percent slopes, very stony	2,337	0.8
8E	Caneyville silt loam, 35 to 55 percent slopes, very rocky	762	0.3
8F	Caneyville silt loam, 55 to 80 percent slopes, very rocky	431	0.1
9D	Caneyville silt loam, karst, 15 to 35 percent slopes, very rocky	968	0.3
10C	Caneyville-Frederick complex, karst, 8 to 15 percent slopes	695	0.2
10D	Caneyville-Frederick complex, karst, 15 to 35 percent slopes	1,012	0.3
10E	Caneyville-Frederick complex, karst, 35 to 55 percent slopes	301	0.1
11B	Cottonbend silt loam, 3 to 8 percent slopes	3,744	1.3
11C	Cottonbend silt loam, 8 to 15 percent slopes	1,019	0.4
12B	Cottonbend-Urban land complex, 3 to 8 percent slopes	204	*
12C	Cottonbend-Urban land complex, 8 to 15 percent slopes	134	*
13A	Coursey silt loam, 0 to 3 percent slopes, rarely flooded	289	*
14B	Coursey-Ogles-Shelocta complex	2,096	0.7
15F	Dekalb channery sandy loam, 55 to 80 percent slopes, extremely stony	434	0.1
16D	Dekalb-Alticrest complex, 15 to 35 percent slopes, very stony	2,321	0.8
16E	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	10,787	3.7
17D	Dekalb-Lily-McClung complex, 15 to 35 percent slopes	6,243	2.2
18E	Dekalb-Lily complex, 35 to 55 percent slopes, very stony	16,069	5.5
19E	Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony	4,970	1.7
20E	Dekalb-Watahala-McClung complex, 35 to 55 percent slopes	121	*
21A	Dunning silt loam, 0 to 3 percent slopes, occasionally flooded	180	*
22B	Escatawba loam, 3 to 8 percent slopes, very stony	2,182	0.8
22C	Escatawba loam, 8 to 15 percent slopes, very stony	5,431	1.9
22D	Escatawba loam, 15 to 35 percent slopes, very stony	2,222	0.8
23C	Faywood-Poplimento complex, 8 to 15 percent slopes	249	*
23D	Faywood-Poplimento complex, 15 to 35 percent slopes	1,584	0.5
23E	Faywood-Poplimento complex, 35 to 55 percent slopes	2,268	0.8
24C	Frederick silt loam, 8 to 15 percent slopes	244	*
24D	Frederick silt loam, 15 to 25 percent slopes	500	0.2
25C	Frederick-Watahala complex, 8 to 15 percent slopes	226	*
25D	Frederick-Watahala complex, 15 to 35 percent slopes	662	0.2
26C	Gilpin silt loam, 8 to 15 percent slopes	356	0.1
26D	Gilpin silt loam, 15 to 25 percent slopes	283	*
27A	Gladehill loam, 0 to 3 percent slopes, occasionally flooded	1,907	0.7
28A	Gladehill loam, 0 to 3 percent slopes, protected	215	*
29	Landfills	54	*
30C	Lehew-Berks complex, 8 to 15 percent slopes, very stony	893	0.3
30D	Lehew-Berks complex, 15 to 35 percent slopes, very stony	6,731	2.3
30E	Lehew-Berks complex, 35 to 55 percent slopes, very stony	21,253	7.3
31F	Lehew-Berks-Rock outcrop complex, 55 to 80 percent slopes, extremely stony	5,869	2.0
32C	Lily sandy loam, 8 to 15 percent slopes	147	*
33D	Lily sandy loam, 15 to 35 percent slopes, very stony	247	*
34C	Lily-McClung-Dekalb complex, 8 to 15 percent slopes	946	0.3
35C	Macove channery silt loam, 3 to 15 percent slopes, very stony	484	0.2
36A	Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded	93	*
37D	McClung-Watahala-Dekalb complex, 15 to 35 percent slopes	331	0.1
38B	Murrill loam, 3 to 8 percent slopes	422	0.1
38C	Murrill loam, 8 to 15 percent slopes	1,279	0.4
38D	Murrill loam, 15 to 25 percent slopes	449	0.2
39C	Murrill cobbly loam, 8 to 15 percent slopes, very stony	788	0.3
39D	Murrill cobbly loam, 15 to 35 percent slopes, very stony	2,163	0.7

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
40B	Nicelytown silt loam, 3 to 8 percent slopes	2,962	1.0
40C	Nicelytown silt loam, 8 to 15 percent slopes	775	0.3
41A	Ogles very cobbly loam, 0 to 3 percent slopes, occasionally flooded	3,040	1.0
42B	Oriskany cobbly sandy loam, 3 to 8 percent slopes, very stony	332	0.1
43C	Oriskany cobbly sandy loam, 8 to 15 percent slopes, extremely stony	5,108	1.8
43D	Oriskany cobbly sandy loam, 15 to 35 percent slopes, extremely stony	9,601	3.3
43E	Oriskany cobbly sandy loam, 35 to 55 percent slopes, extremely stony	2,868	1.0
44E	Oriskany extremely bouldery sandy loam, 25 to 55 percent slopes, very rubbly	1,882	0.6
45C	Oriskany-Murrill complex, 8 to 15 percent slopes, very stony	1,575	0.5
45D	Oriskany-Murrill complex, 15 to 35 percent slopes, very stony	7,615	2.6
45E	Oriskany-Murrill complex, 35 to 55 percent slopes, extremely stony	3,046	1.0
46A	Purdy silty clay loam, 0 to 3 percent slopes	962	0.3
47C	Shelocta-Berks complex, 8 to 15 percent slopes	4,516	1.6
47D	Shelocta-Berks complex, 15 to 35 percent slopes	9,819	3.4
47E	Shelocta-Berks complex, 35 to 55 percent slopes	1,441	0.5
48B	Sugarhol silt loam, 3 to 8 percent slopes	200	*
48C	Sugarhol silt loam, 8 to 15 percent slopes	150	*
49	Udorthents, smoothed-Rock outcrop complex, 1 to 65 percent slopes	2,401	0.8
50	Urban land-Udorthents, smoothed complex, 3 to 15 percent slopes	1,526	0.5
51E	Watahala-Frederick complex, 35 to 55 percent slopes, very rocky	189	*
52D	Weikert-Berks-Rough complex, 15 to 35 percent slopes	11,301	3.9
52E	Weikert-Berks-Rough complex, 35 to 55 percent slopes	55,834	19.2
52F	Weikert-Berks-Rough complex, 55 to 80 percent slopes, very stony	2,304	0.8
53F	Weikert-Rough complex, 55 to 80 percent slopes	27,375	9.4
54F	Weikert-Rock outcrop-Rough complex	1,062	0.4
55C	Wharton-Blairton complex, 8 to 15 percent slopes	314	0.1
55D	Wharton-Blairton complex, 15 to 35 percent slopes	552	0.2
56A	Wolfgap loam, 0 to 3 percent slopes, occasionally flooded	1,725	0.6
57A	Wolfgap loam, 0 to 3 percent slopes, protected	106	*
58B	Zoar silt loam, 3 to 8 percent slopes	1,988	0.7
59B	Zoar-Urban land complex, 3 to 8 percent slopes	330	0.1
W	Water	2,360	0.8
	Total	290,300	100.0

* Less than 0.1 percent.

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
1A, 2A:							
Alonzville	1	L	6.0	130	19.5	4.0	10.0
3C:							
Alticrest	7s	FF	---	---	---	---	---
Dekalb	7s	FF	---	---	---	---	---
4D:							
Berks	6e	JJ	---	---	---	---	3.0
4E:							
Berks	7e	JJ	---	---	---	---	---
5C:							
Berks	3e	JJ	---	60	9.0	2.6	3.0
Weikert	4s	JJ	---	55	8.2	2.0	2.0
6F:							
Berks	7e	JJ	---	---	---	---	---
Weikert	7e	JJ	---	---	---	---	---
7D:							
Berks	7s	JJ	---	---	---	---	---
Weikert	7s	JJ	---	---	---	---	---
7E:							
Berks	7e	JJ	---	---	---	---	---
Weikert	7e	JJ	---	---	---	---	---
8E, 8F:							
Caneyville	7e	Y	---	---	---	---	---
9D:							
Caneyville	6e	Y	---	---	---	---	6.0
10C:							
Caneyville	3e	Y	---	---	---	3.0	7.0
Frederick	3e	M	5.3	---	---	3.5	8.0
10D:							
Caneyville	6e	Y	---	---	---	---	6.0
Frederick	6e	M	---	---	---	---	7.0
10E:							
Caneyville	7e	Y	---	---	---	---	---
Frederick	7e	M	---	---	---	---	---

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
11B:							
Cottonbend--------	2e	L	6.0	130	19.5	4.0	10.0
11C:							
Cottonbend--------	3e	L	4.5	115	17.2	3.5	9.0
12B:							
Cottonbend--------	2e	L	---	---	---	---	---
Urban land.							
12C:							
Cottonbend--------	3e	L	---	---	---	---	---
Urban land.							
13A:							
Coursey-----------	2w	G	---	140	21.0	4.5	8.0
14B:							
Coursey-----------	2w	G	---	140	21.0	4.0	7.5
Ogles-------------	4s	CC	---	60	9.0	2.5	3.0
Shelocta----------	2e	L	6.0	130	19.5	4.0	10.0
15F:							
Dekalb------------	7e	FF	---	---	---	---	---
16D:							
Dekalb------------	7s	FF	---	---	---	---	---
Alticrest---------	7s	FF	---	---	---	---	---
16E:							
Dekalb------------	7e	FF	---	---	---	---	---
Alticrest---------	7e	FF	---	---	---	---	---
17D:							
Dekalb------------	7s	FF	---	---	---	---	---
Lily--------------	7s	U	---	---	---	---	---
McClung-----------	6e	M	---	---	---	---	---
18E:							
Dekalb------------	7e	FF	---	---	---	---	---
Lily--------------	7e	U	---	---	---	---	---
19E:							
Dekalb------------	7s	FF	---	---	---	---	---
Rock outcrop.							

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
20E:							
Dekalb	7e	FF	---	---	---	---	---
Watahala	7e	M	---	---	---	---	---
McClung	7e	M	---	---	---	---	---
21A:							
Dunning	4w	NN	---	65	9.8	---	8.0
22B:							
Escatawba	6s	L	---	---	---	---	6.0
22C:							
Escatawba	6s	L	---	---	---	---	5.0
22D:							
Escatawba	7s	L	---	---	---	---	---
23C:							
Faywood	3e	U	3.5	95	14.2	3.1	7.0
Poplimento	3e	M	5.3	115	17.2	3.5	8.0
23D:							
Faywood	6e	U	---	---	---	---	6.0
Poplimento	6e	M	---	---	---	---	7.0
23E:							
Faywood	7e	U	---	---	---	---	---
Poplimento	7e	M	---	---	---	---	---
24C:							
Frederick	3e	M	5.3	115	17.2	3.5	8.0
24D:							
Frederick	4e	M	4.8	105	15.8	3.2	7.5
25C:							
Frederick	3e	M	4.8	105	15.8	3.2	8.0
Watahala	4s	M	4.0	85	12.8	2.6	6.0
25D:							
Frederick	6e	M	---	---	---	---	7.5
Watahala	6s	M	---	---	---	---	5.5
26C:							
Gilpin	3e	U	3.5	95	14.2	3.1	7.5
26D:							
Gilpin	4e	U	3.2	90	13.5	2.8	6.5
27A, 28A:							
Gladehill	1	A	6.0	140	21.0	4.5	10.5

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
29. Landfills							
30C:							
Lehew-------------	6s	JJ	---	---	---	---	2.0
Berks-------------	6s	JJ	---	---	---	---	3.0
30D:							
Lehew-------------	7s	JJ	---	---	---	---	---
Berks-------------	7s	JJ	---	---	---	---	---
30E:							
Lehew-------------	7e	JJ	---	---	---	---	---
Berks-------------	7e	JJ	---	---	---	---	---
31F:							
Lehew-------------	7s	JJ	---	---	---	---	---
Berks-------------	7s	JJ	---	---	---	---	---
Rock outcrop.							
32C:							
Lily--------------	3e	U	3.5	95	14.0	3.0	6.5
33D:							
Lily--------------	7s	U	---	---	---	---	---
34C:							
Lily--------------	3e	U	3.5	95	14.0	3.0	6.5
McClung-----------	3e	M	5.3	115	17.2	3.5	8.0
Dekalb------------	7s	FF	---	---	---	---	---
35C:							
Macove------------	6s	CC	---	---	---	---	6.0
36A:							
Massanetta--------	2w	A	---	140	21.0	4.5	8.0
37D:							
McClung-----------	6e	M	---	---	---	---	6.5
Watahala----------	7s	M	---	---	---	---	---
Dekalb------------	7s	FF	---	---	---	---	---
38B:							
Murrill-----------	2e	L	6.0	130	19.5	4.0	9.0
38C:							
Murrill-----------	3e	L	4.8	115	17.2	3.5	8.0
38D:							
Murrill-----------	4e	L	4.4	105	15.8	3.2	6.5

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
39C:							
Murrill-----------	6s	L	---	---	---	---	7.0
39D:							
Murrill-----------	7s	L	---	---	---	---	---
40B:							
Nicelytown--------	2e	G	---	140	21.0	4.5	8.0
40C:							
Nicelytown--------	3e	G	---	120	18.0	4.0	7.0
41A:							
Ogles-------------	4s	CC	---	60	9.0	2.5	3.0
42B:							
Oriskany----------	6s	CC	---	---	---	---	6.0
43C, 43D:							
Oriskany----------	7s	CC	---	---	---	---	---
43E, 44E:							
Oriskany----------	7e	CC	---	---	---	---	---
45C:							
Oriskany----------	6s	CC	---	---	---	---	6.0
Murrill-----------	6s	L	---	---	---	---	7.0
45D:							
Oriskany----------	7s	CC	---	---	---	---	---
Murrill-----------	7s	L	---	---	---	---	---
45E:							
Oriskany----------	7e	CC	---	---	---	---	---
Murrill-----------	7e	L	---	---	---	---	---
46A:							
Purdy-------------	4w	NN	---	65	9.8	---	6.5
47C:							
Shelocta----------	3e	L	4.8	115	17.2	3.5	9.0
Berks-------------	3e	JJ	---	60	9.0	2.6	3.0
47D:							
Shelocta----------	6e	L	---	---	---	---	7.0
Berks-------------	6e	JJ	---	---	---	---	2.0
47E:							
Shelocta----------	7e	L	---	---	---	---	---
Berks-------------	7e	JJ	---	---	---	---	---
48B:							
Sugarhol----------	2e	O	5.5	130	19.5	4.0	10.0

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
48C:							
Sugarhol----------	3e	O	4.8	115	17.2	3.5	9.0
49.							
Udorthents-Rock outcrop							
50.							
Urban land-Udorthents							
51E:							
Watahala----------	7e	M	---	---	---	---	---
Frederick---------	7e	M	---	---	---	---	---
52D:							
Weikert-----------	6e	JJ	---	---	---	---	1.5
Berks-------------	6e	JJ	---	---	---	---	3.0
Rough-------------	7e	JJ	---	---	---	---	---
52E, 52F:							
Weikert-----------	7e	JJ	---	---	---	---	---
Berks-------------	7e	JJ	---	---	---	---	---
Rough-------------	7e	JJ	---	---	---	---	---
53F:							
Weikert-----------	7e	JJ	---	---	---	---	---
Rough-------------	7e	JJ	---	---	---	---	---
54F:							
Weikert-----------	7s	JJ	---	---	---	---	---
Rock outcrop.							
Rough-------------	7s	JJ	---	---	---	---	---
55C:							
Wharton-----------	3e	AA	---	90	13.5	3.0	7.5
Blairton----------	3e	AA	---	85	12.8	2.5	6.5
55D:							
Wharton-----------	6e	AA	---	---	---	---	6.5
Blairton----------	6e	AA	---	---	---	---	5.5
56A, 57A:							
Wolfgap-----------	1	A	6.0	160	24.0	4.5	12.0
58B:							
Zoar--------------	2e	K	---	130	19.5	4.0	8.0

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
59B:							
Zoar	2e	K	---	---	---	---	---
Urban land.							
W.							
Water							

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland)

Map symbol	Map unit name
1A	Alonzville loam, 0 to 3 percent slopes, rarely flooded
2A	Alonzville loam, 0 to 3 percent slopes, protected
11B	Cottonbend silt loam, 3 to 8 percent slopes
13A	Coursey silt loam, 0 to 3 percent slopes, rarely flooded
27A	Gladehill loam, 0 to 3 percent slopes, occasionally flooded
28A	Gladehill loam, 0 to 3 percent slopes, protected
36A	Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded
38B	Murrill loam, 3 to 8 percent slopes
40B	Nicelytown silt loam, 3 to 8 percent slopes
48B	Sugarhol silt loam, 3 to 8 percent slopes
56A	Wolfgap loam, 0 to 3 percent slopes, occasionally flooded
57A	Wolfgap loam, 0 to 3 percent slopes, protected

Table 7.—Agricultural Waste Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
1A:					
Alonzville	80	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
				Flooding	0.40
2A:					
Alonzville	80	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
3C:					
Alticrest	50	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Too acid	0.82	Droughty	1.00
		Large stones content	0.76	Too acid	1.00
Dekalb	30	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Droughty	1.00
				Too acid	1.00
		Too acid	0.89		
4D, 4E:					
Berks	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
5C:					
Berks	55	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.71	Droughty	1.00
		Slope	0.63	Too acid	0.96
Weikert	30	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope	0.63	Low adsorption	1.00
6F:					
Berks	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
Weikert	15	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
7D:					
Berks	70	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
Weikert	25	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
7E:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
Weikert	40	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
8E, 8F, 9D:					
Caneyville	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.54	Slow water movement	1.00
10C:					
Caneyville	45	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Depth to bedrock	0.54	Slow water movement	1.00
		Droughty	0.39	Depth to bedrock	0.54
Frederick	45	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
10D:					
Caneyville	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.54	Slow water movement	1.00
Frederick	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
10E:					
Caneyville	60	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.54	Slow water movement	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
10E:					
Frederick	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
11B:					
Cottonbend	85	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
11C:					
Cottonbend	85	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
		Slope	0.37	Slope	0.37
12B:					
Cottonbend	50	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
Urban land	35	Not rated		Not rated	
12C:					
Cottonbend	50	Somewhat limited		Somewhat limited	
		Too acid	0.37	Too acid	0.96
		Slope	0.37	Slope	0.37
Urban land	35	Not rated		Not rated	
13A:					
Coursey	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.37	Too acid	0.96
				Flooding	0.40
14B:					
Coursey	30	Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.37	Too acid	0.96
				Flooding	0.40
Ogles	30	Very limited		Very limited	
		Cobble content	1.00	Flooding	1.00
		Droughty	1.00	Cobble content	1.00
		Flooding	0.60	Droughty	1.00
Shelocta	30	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
15F:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
		Droughty	1.00	Droughty	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
16D, 16E:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Droughty	1.00
Alticrest	25	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.82	Droughty	1.00
17D:					
Dekalb	40	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Droughty	1.00
Lily	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.89	Slope	1.00
		Large stones content	0.76	Too acid	1.00
McClung	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.92	Too acid	1.00
18E:					
Dekalb	65	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Droughty	1.00
Lily	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.89	Slope	1.00
		Large stones content	0.76	Too acid	1.00
19E:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
				Droughty	1.00
		Droughty	1.00		
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Droughty	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
20E:					
Watahala	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.89	Too acid	1.00
McClung	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.92	Too acid	1.00
21A:					
Dunning	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Flooding	1.00
		Flooding	0.60	Slow water movement	1.00
22B:					
Escatawba	80	Somewhat limited		Very limited	
		Large stones content	0.94	Too acid	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86
		Too acid	0.78	Slow water movement	0.37
22C:					
Escatawba	80	Somewhat limited		Very limited	
		Large stones content	0.94	Too acid	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86
		Too acid	0.78	Slope	0.63
22D:					
Escatawba	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.94	Too acid	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86
23C:					
Faywood	50	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.90	Droughty	1.00
		Slow water movement	0.81	Depth to bedrock	0.90
Poplimento	40	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Slow water movement	0.50	Too acid	0.42
		Too acid	0.11	Slow water movement	0.37
23D:					
Faywood	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.90	Droughty	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
23D:					
Poplimento----------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Too acid	0.42
		Too acid	0.11	Slow water movement	0.37
23E:					
Faywood-------------	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.90	Droughty	1.00
Poplimento----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Too acid	0.42
		Too acid	0.11	Slow water movement	0.37
24C:					
Frederick-----------	75	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Too acid	0.11	Too acid	0.42
24D:					
Frederick-----------	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
25C:					
Frederick-----------	50	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Too acid	0.11	Too acid	0.42
Watahala------------	40	Somewhat limited		Very limited	
		Too acid	0.89	Too acid	1.00
		Slope	0.63	Slope	0.63
25D:					
Frederick-----------	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
Watahala------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.89	Too acid	1.00
26C:					
Gilpin--------------	80	Somewhat limited		Very limited	
		Too acid	0.73	Low adsorption	1.00
		Slope	0.63	Too acid	1.00
		Droughty	0.37	Slope	0.63
26D:					
Gilpin--------------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.37	Too acid	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
27A:					
Gladehill	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
28A:					
Gladehill	80	Not limited		Not limited	
29:					
Landfills	85	Not rated		Not rated	
30C:					
Lehew	50	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Too acid	0.89	Droughty	1.00
		Large stones content	0.76	Too acid	1.00
Berks	45	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Large stones content	0.76	Droughty	1.00
				Too acid	0.96
		Depth to bedrock	0.71		
30D:					
Lehew	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.89	Droughty	1.00
Berks	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Large stones content	0.76	Droughty	1.00
30E:					
Lehew	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.89	Droughty	1.00
Berks	40	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Large stones content	0.76	Droughty	1.00
31F:					
Lehew	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
				Droughty	1.00
		Droughty	1.00		
Berks	40	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
				Droughty	1.00
		Droughty	1.00		
Rock outcrop	10	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
32C:					
Lily----------------	85	Somewhat limited		Very limited	
		Too acid	0.89	Low adsorption	1.00
		Droughty	0.74	Too acid	1.00
		Slope	0.63	Droughty	0.74
33D:					
Lily----------------	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.89	Slope	1.00
		Large stones content	0.76	Too acid	1.00
34C:					
Lily----------------	45	Somewhat limited		Very limited	
		Too acid	0.89	Low adsorption	1.00
		Droughty	0.74	Too acid	1.00
		Slope	0.63	Droughty	0.74
McClung-------------	30	Somewhat limited		Very limited	
		Too acid	0.92	Too acid	1.00
		Slope	0.63	Slope	0.63
Dekalb--------------	20	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Droughty	1.00
				Too acid	1.00
		Too acid	0.89		
35C:					
Macove--------------	85	Somewhat limited		Very limited	
		Large stones content	0.94	Too acid	0.99
				Slope	0.63
		Slope	0.63	Droughty	0.20
		Too acid	0.50		
36A:					
Massanetta----------	75	Very limited		Very limited	
		Depth to saturated zone	0.99	Flooding	1.00
		Flooding	0.60	Depth to saturated zone	0.99
37D:					
McClung-------------	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.92	Too acid	1.00
Watahala------------	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.89	Too acid	1.00
Dekalb--------------	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Droughty	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
38B:					
Murrill	85	Somewhat limited		Very limited	
		Too acid	0.62	Too acid	1.00
38C:					
Murrill	85	Somewhat limited		Very limited	
		Slope	0.63	Too acid	1.00
		Too acid	0.62	Slope	0.63
38D:					
Murrill	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.62	Too acid	1.00
39C:					
Murrill	95	Very limited		Very limited	
		Cobble content	1.00	Cobble content	1.00
		Large stones content	0.76	Too acid	1.00
				Slope	0.63
		Slope	0.63		
39D:					
Murrill	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Cobble content	1.00	Cobble content	1.00
		Large stones content	0.76	Too acid	1.00
40B:					
Nicelytown	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.64	Too acid	0.96
				Slow water movement	0.50
		Too acid	0.37		
40C:					
Nicelytown	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.64	Too acid	0.96
				Slope	0.63
		Slope	0.63		
41A:					
Ogles	80	Very limited		Very limited	
		Cobble content	1.00	Flooding	1.00
		Droughty	1.00	Cobble content	1.00
		Flooding	0.60	Droughty	1.00
42B:					
Oriskany	85	Somewhat limited		Somewhat limited	
		Large stones content	0.76	Too acid	0.96
				Cobble content	0.32
		Too acid	0.37	Large stones on the surface	0.18
		Cobble content	0.32		

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
43C:					
Oriskany	75	Very limited		Somewhat limited	
		Large stones content	1.00	Too acid	0.96
		Slope	0.63	Slope	0.63
		Too acid	0.37	Cobble content	0.32
43D:					
Oriskany	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Too acid	0.96
		Too acid	0.37	Cobble content	0.32
43E:					
Oriskany	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Too acid	0.96
		Too acid	0.37	Cobble content	0.32
44E:					
Oriskany	85	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Large stones on the surface	1.00	Slope	1.00
		Large stones content	1.00	Too acid	0.96
45C:					
Oriskany	55	Somewhat limited		Somewhat limited	
		Large stones content	0.76	Too acid	0.96
		Slope	0.63	Slope	0.63
		Too acid	0.37	Cobble content	0.32
Murrill	35	Very limited		Very limited	
		Cobble content	1.00	Cobble content	1.00
		Large stones content	0.76	Too acid	1.00
		Slope	0.63	Slope	0.63
45D:					
Oriskany	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.76	Too acid	0.96
		Too acid	0.37	Cobble content	0.32
Murrill	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Cobble content	1.00	Cobble content	1.00
		Large stones content	0.76	Too acid	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
45E:					
Oriskany	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Too acid	0.96
		Too acid	0.37	Cobble content	0.32
Murrill	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Cobble content	1.00
		Cobble content	1.00	Too acid	1.00
46A:					
Purdy	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Ponding	1.00	Ponding	1.00
47C:					
Shelocta	60	Somewhat limited		Very limited	
		Slope	0.63	Too acid	0.99
		Too acid	0.50	Slope	0.63
Berks	20	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.71	Droughty	1.00
		Slope	0.63	Too acid	0.96
47D:					
Shelocta	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
Berks	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
47E:					
Shelocta	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
Berks	25	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
48B:					
Sugarhol	85	Somewhat limited		Very limited	
		Too acid	0.89	Too acid	1.00
48C:					
Sugarhol	85	Somewhat limited		Very limited	
		Too acid	0.89	Too acid	1.00
		Slope	0.63	Slope	0.63

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
49:					
Udorthents----------	85	Not rated		Not rated	
Rock outcrop--------	15	Not rated		Not rated	
50:					
Urban land----------	50	Not rated		Not rated	
Udorthents----------	40	Not rated		Not rated	
51E:					
Watahala------------	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.89	Too acid	1.00
		Large stones content	0.47		
Frederick-----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.47	Too acid	0.42
		Too acid	0.11		
52D:					
Weikert-------------	35	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Berks---------------	34	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
Rough---------------	10	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
52E:					
Weikert-------------	40	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Berks---------------	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Depth to bedrock	0.71	Droughty	1.00
Rough---------------	15	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52F:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Berks	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Large stones content	0.76	Droughty	1.00
Rough	15	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
53F:					
Weikert	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Rough	25	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
54F:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Rock outcrop	25	Not rated		Not rated	
Rough	20	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
55C:					
Wharton	55	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Too acid	1.00
		Slow water movement	0.81	Depth to saturated zone	0.95
		Slope	0.63	Slow water movement	0.68
Blairton	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.63	Low adsorption	1.00
		Too acid	0.62	Too acid	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
55D:					
Wharton	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.95	Too acid	1.00
		Slow water movement	0.81	Depth to saturated zone	0.95
Blairton	40	Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Low adsorption	1.00
		Too acid	0.62	Slope	1.00
56A:					
Wolfgap	95	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Too acid	0.01	Too acid	0.01
57A:					
Wolfgap	95	Somewhat limited		Somewhat limited	
		Too acid	0.01	Too acid	0.01
58B:					
Zoar	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Too acid	0.22	Too acid	0.77
59B:					
Zoar	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Too acid	0.22	Too acid	0.77
Urban land	40	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
1A:					
Alonzville----------	80	Somewhat limited		Very limited	
		Too acid	0.96	Seepage	1.00
				Too acid	0.96
				Flooding	0.40
2A:					
Alonzville----------	80	Somewhat limited		Very limited	
		Too acid	0.96	Seepage	1.00
				Too acid	0.96
3C:					
Alticrest-----------	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
Dekalb--------------	30	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
4D:					
Berks---------------	80	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
4E:					
Berks---------------	80	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
5C:					
Berks---------------	55	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
Weikert-------------	30	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
6F:					
Berks---------------	80	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
6F:					
Weikert	15	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
7D:					
Berks	70	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Weikert	25	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
7E:					
Berks	55	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Weikert	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
8E:					
Caneyville	85	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
				Seepage	1.00
8F:					
Caneyville	85	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water	1.00	Too steep	1.00
		movement	1.00	Seepage	1.00
9D:					
Caneyville	85	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water	1.00	Too steep	1.00
		movement	1.00	Seepage	1.00
10C:					
Caneyville	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Seepage	1.00
				Too steep	0.94
Frederick	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	0.94
				Too acid	0.42

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
10D:					
Caneyville	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
				Seepage	1.00
Frederick	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
10E:					
Caneyville	60	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
				Seepage	1.00
Frederick	35	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
11B:					
Cottonbend	85	Somewhat limited		Very limited	
		Too acid	0.96	Seepage	1.00
		Too steep	0.32	Too acid	0.96
11C:					
Cottonbend	85	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too acid	0.96
				Too steep	0.94
12B:					
Cottonbend	50	Somewhat limited		Very limited	
		Too acid	0.96	Seepage	1.00
		Too steep	0.32	Too acid	0.96
Urban land	35	Not rated		Not rated	
12C:					
Cottonbend	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too acid	0.96
				Too steep	0.94
Urban land	35	Not rated		Not rated	
13A:					
Coursey	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Seepage	1.00
		Too acid	0.96	Depth to saturated zone	0.99
				Too acid	0.96

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
14B:					
Coursey	30	Very limited		Very limited	
		Depth to saturated zone	0.99	Seepage	1.00
		Too acid	0.96	Depth to saturated zone	0.99
		Too steep	0.32	Too acid	0.96
Ogles	30	Very limited		Very limited	
		Cobble content	1.00	Flooding	1.00
		Droughty	1.00	Seepage	1.00
		Too acid	0.67	Cobble content	1.00
Shelocta	30	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Too steep	0.32	Too acid	0.99
15F:					
Dekalb	60	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
16D:					
Dekalb	60	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Alticrest	25	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
16E:					
Dekalb	60	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Alticrest	25	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
17D:					
Dekalb	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Lily	30	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep	1.00
				Seepage	1.00
McClung	15	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
18E:					
Dekalb	65	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Lily	20	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep	1.00
				Seepage	1.00
19E:					
Dekalb	60	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Watahala	30	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
McClung	20	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
21A:					
Dunning	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Seeepage	1.00
22B:					
Escatawba	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.86	Too acid	1.00
		Slow water movement	0.37	Depth to saturated zone	0.86
22C:					
Escatawba	80	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Depth to saturated zone	0.86	Too steep	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
22D:					
Escatawba-----------	75	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
23C:					
Faywood-------------	50	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	0.90	Too steep	1.00
Poplimento----------	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
23D:					
Faywood-------------	50	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Poplimento----------	40	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.42	Seepage	1.00
				Too acid	0.42
23E:					
Faywood-------------	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Poplimento----------	35	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.42	Seepage	1.00
				Too acid	0.42
24C:					
Frederick-----------	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
24D:					
Frederick-----------	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
25C:					
Frederick-----------	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
25C:					
Watahala	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
				Too steep	1.00
25D:					
Frederick	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
Watahala	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
26C:					
Gilpin	80	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
26D:					
Gilpin	85	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep	1.00
				Seepage	1.00
27A:					
Gladehill	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
				Seepage	1.00
28A:					
Gladehill	80	Not limited		Very limited	
				Seepage	1.00
29:					
Landfills	85	Not rated		Not rated	
30C:					
Lehew	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
Berks	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
30D:					
Lehew	50	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
30D:					
Berks	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
30E:					
Lehew	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Berks	40	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
31F:					
Lehew	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
Berks	40	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Rock outcrop	10	Not rated		Not rated	
32C:					
Lily	85	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
33D:					
Lily	80	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep	1.00
				Seepage	1.00
34C:					
Lily	45	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
McClung	30	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
				Too steep	1.00
Dekalb	20	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35C:					
Macove	85	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.99	Too steep	1.00
				Stone content	1.00
36A:					
Massanetta	75	Very limited		Very limited	
		Depth to saturated zone	0.99	Flooding	1.00
		Flooding	0.60	Seepage	1.00
				Depth to saturated zone	0.99
37D:					
McClung	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
Watahala	25	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
Dekalb	20	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
				Too steep	1.00
38B:					
Murrill	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	0.32	Too acid	1.00
38C:					
Murrill	85	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
38D:					
Murrill	85	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
39C:					
Murrill	95	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Cobble content	1.00	Too steep	1.00
		Too acid	1.00	Too acid	1.00
39D:					
Murrill	95	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Cobble content	1.00	Seepage	1.00
				Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
40B:					
Nicelytown----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.96	Seepage	1.00
		Slow water movement	0.50	Too acid	0.96
40C:					
Nicelytown----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
41A:					
Ogles---------------	80	Very limited		Very limited	
		Cobble content	1.00	Flooding	1.00
		Droughty	1.00	Seepage	1.00
		Too acid	0.67	Cobble content	1.00
42B:					
Oriskany------------	85	Somewhat limited		Very limited	
		Too acid	0.96	Seepage	1.00
		Too steep	0.32	Cobble content	1.00
		Cobble content	0.32	Too acid	0.96
43C:					
Oriskany------------	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00
43D:					
Oriskany------------	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00
43E:					
Oriskany------------	80	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00
44E:					
Oriskany------------	85	Very limited		Very limited	
		Large stones on the surface	1.00	Seepage	1.00
				Too steep	1.00
		Too steep	1.00	Cobble content	0.99
45C:					
Oriskany------------	55	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
45C:					
Murrill	35	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Cobble content	1.00	Too steep	1.00
		Too acid	1.00	Too acid	1.00
45D:					
Oriskany	55	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00
Murrill	35	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Cobble content	1.00	Seepage	1.00
				Too acid	1.00
45E:					
Oriskany	65	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
				Cobble content	1.00
Murrill	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Cobble content	1.00	Seepage	1.00
				Too acid	1.00
46A:					
Purdy	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Ponding	1.00
				Too acid	0.96
		Ponding	1.00		
47C:					
Shelocta	60	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.99	Too steep	1.00
				Too acid	0.99
Berks	20	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Seepage	1.00
		Too acid	0.96	Too steep	1.00
47D:					
Shelocta	60	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.99	Seepage	1.00
				Too acid	0.99
Berks	20	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
47E:					
Shelocta------------	70	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.99	Seepage	1.00
				Too acid	0.99
Berks---------------	25	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
48B:					
Sugarhol------------	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	0.32	Too acid	1.00
48C:					
Sugarhol------------	85	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
				Too steep	1.00
49:					
Udorthents----------	85	Not rated		Not rated	
Rock outcrop--------	15	Not rated		Not rated	
50:					
Urban land----------	50	Not rated		Not rated	
Udorthents----------	40	Not rated		Not rated	
51E:					
Watahala------------	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too steep	1.00
				Too acid	1.00
Frederick-----------	35	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.42	Too steep	1.00
				Too acid	0.42
52D:					
Weikert-------------	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
Berks---------------	34	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Rough---------------	10	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
52E:					
Weikert	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
Berks	30	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Rough	15	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
52F:					
Weikert	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
Berks	30	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep	1.00
				Seepage	1.00
Rough	15	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
53F:					
Weikert	65	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
Rough	25	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
54F:					
Weikert	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
Rock outcrop	25	Not rated		Not rated	
Rough	20	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
55C:					
Wharton	55	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Depth to saturated zone	0.95	Too steep	1.00
Blairton	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Too acid	1.00	Seepage	1.00
55D:					
Wharton	55	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
Blairton	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too steep	1.00
56A:					
Wolfgap	95	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Too acid	0.01	Seepage	1.00
				Too acid	0.01
57A:					
Wolfgap	95	Somewhat limited		Very limited	
		Too acid	0.01	Seepage	1.00
				Too acid	0.01
58B:					
Zoar	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77
59B:					
Zoar	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77
Urban land	40	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
1A, 2A:					
Alonzville----------	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.96
3C:					
Alticrest-----------	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32	Too acid	1.00
Dekalb--------------	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21	Too acid	1.00
4D, 4E:					
Berks---------------	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
5C:					
Berks---------------	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Weikert-------------	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
6F:					
Berks---------------	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Weikert-------------	15	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
7D:					
Berks	70	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Weikert	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
7E:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Weikert	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
8E, 8F, 9D:					
Caneyville	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
10C:					
Caneyville	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00	Slow water movement	0.96
Frederick	45	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
10D:					
Caneyville	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
Frederick	45	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
10E:					
Caneyville----------	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
Frederick-----------	35	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
11B:					
Cottonbend----------	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.96
				Too steep	0.32
		Slope	0.12		
		Too acid	0.03		
11C:					
Cottonbend----------	85	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.96
		Too acid	0.03		
12B:					
Cottonbend----------	50	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.96
				Too steep	0.32
		Slope	0.12		
		Too acid	0.03		
Urban land----------	35	Not rated		Not rated	
12C:					
Cottonbend----------	50	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.96
				Too steep	0.94
		Too acid	0.03		
Urban land----------	35	Not rated		Not rated	
13A:					
Coursey-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slow water movement	1.00	Too acid	0.96
14B:					
Coursey-------------	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slow water movement	1.00	Too acid	0.96
				Too steep	0.32
		Slope	0.12		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
14B:					
Ogles	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Cobble content	1.00
		Cobble content	1.00	Too acid	0.67
		Flooding	0.60	Flooding	0.60
Shelocta	30	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Slope	0.12	Too steep	0.32
15F:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
16D, 16E:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
Alticrest	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
17D:					
Dekalb	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
Lily	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
McClung	15	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14		
18E:					
Dekalb	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
Lily	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19E:					
Dekalb	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
Watahala	30	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
McClung	20	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14		
21A:					
Dunning	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.96
		Flooding	0.60	Flooding	0.60
22B:					
Escatawba	80	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86
		Too acid	0.21	Too steep	0.32
22C:					
Escatawba	80	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Depth to saturated zone	0.86		
22D:					
Escatawba	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Depth to saturated zone	0.86		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
23C, 23D:					
Faywood	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
Poplimento	40	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
23E:					
Faywood	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
Poplimento	35	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
24C, 24D:					
Frederick	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
25C, 25D:					
Frederick	50	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42
Watahala	40	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
26C:					
Gilpin	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
26D:					
Gilpin	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	1.00		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
27A:					
Gladehill-----------	80	Somewhat limited		Somewhat limited	
		Flooding	0.60	Flooding	0.60
		Slow water movement	0.32		
28A:					
Gladehill-----------	80	Somewhat limited		Not limited	
		Slow water movement	0.32		
29:					
Landfills-----------	85	Not rated		Not rated	
30C:					
Lehew---------------	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
				Too acid	1.00
Berks---------------	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
30D:					
Lehew---------------	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
Berks---------------	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
30E:					
Lehew---------------	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
Berks---------------	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
31F:					
Lehew---------------	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
Berks---------------	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
31F:					
Rock outcrop	10	Not rated		Not rated	
32C:					
Lily	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62	Too acid	1.00
33D:					
Lily	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
34C:					
Lily	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62	Too acid	1.00
McClung	30	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14		
Dekalb	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21	Too acid	1.00
35C:					
Macove	85	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Stone content	1.00	Too acid	0.99
		Slow water movement	0.32		
36A:					
Massanetta	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60		
37D:					
McClung	45	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
37D:					
Watahala	25	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
Dekalb	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.21		
38B:					
Murrill	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Too steep	0.32
		Slope	0.12		
		Too acid	0.03		
38C, 38D:					
Murrill	85	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
39C, 39D:					
Murrill	95	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Cobble content	1.00
		Too acid	0.03		
40B:					
Nicelytown	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	0.96
				Slow water movement	0.34
		Slope	0.12		
40C:					
Nicelytown	80	Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
				Too steep	1.00
		Depth to saturated zone	1.00		
41A:					
Ogles	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Cobble content	1.00
				Too acid	0.67
		Cobble content	1.00	Flooding	0.60
		Flooding	0.60		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
42B:					
Oriskany	85	Very limited		Somewhat limited	
		Cobble content	1.00	Too acid	0.96
		Slow water movement	0.32	Too steep	0.32
				Cobble content	0.32
		Slope	0.12		
43C, 43D:					
Oriskany	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Cobble content	1.00	Too acid	0.96
		Slow water movement	0.32		
43E:					
Oriskany	80	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Cobble content	1.00	Too acid	0.96
		Slow water movement	0.32		
44E:					
Oriskany	85	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Cobble content	1.00		
		Stone content	0.41	Too steep	1.00
45C, 45D:					
Oriskany	55	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Cobble content	1.00	Too acid	0.96
		Slow water movement	0.32		
Murrill	35	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Cobble content	1.00
		Too acid	0.03		
45E:					
Oriskany	65	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Cobble content	1.00	Too acid	0.96
		Slow water movement	0.32		
Murrill	25	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Cobble content	1.00
		Too acid	0.03		
46A:					
Purdy	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Slow water movement	0.99

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
47C, 47D:					
Shelocta	60	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.99
Berks	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
47E:					
Shelocta	70	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.99
Berks	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
48B:					
Sugarhol	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Too steep	0.32
		Slope	0.12		
		Too acid	0.03		
48C:					
Sugarhol	85	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
49:					
Udorthents	85	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
50:					
Urban land	50	Not rated		Not rated	
Udorthents	40	Not rated		Not rated	
51E:					
Watahala	45	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.03		
Frederick	35	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
52D:					
Weikert	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
Berks	34	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Rough	10	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.03		
52E, 52F:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
Berks	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.62		
Rough	15	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.03		
53F:					
Weikert	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
Rough	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.03		
54F:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	0.32		
Rock outcrop	25	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
54F:					
Rough	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.03		
55C, 55D:					
Wharton	55	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	1.00
		Depth to bedrock	1.00		
Blairton	40	Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to saturated zone	1.00	Too steep	1.00
56A:					
Wolfgap	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60	Too acid	0.01
57A:					
Wolfgap	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.01
58B:					
Zoar	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.96
		Slope	0.12	Too acid	0.77
59B:					
Zoar	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.96
		Slope	0.12	Too acid	0.77
Urban land	40	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 8.—Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
1A, 2A:				
Alonzville	northern red oak	70	52	eastern white pine, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	eastern white pine	80	144	
	hickory	65	48	
	white oak	70	52	
3C:				
Alticrest	northern red oak	60	43	eastern white pine, northern red oak
	chestnut oak	60	43	
	pitch pine	60	91	
	scarlet oak	60	43	
	Virginia pine	60	91	
Dekalb	northern red oak	55	38	eastern white pine, northern red oak
	chestnut oak	55	38	
	pitch pine	55	80	
	scarlet oak	55	38	
	Virginia pine	55	80	
4D:				
Berks	northern red oak	65	48	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	65	48	
	black oak	65	48	
	hickory	---	---	
	white oak	65	48	
	eastern white pine	---	---	
4E:				
Berks	northern red oak	65	48	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	65	48	
	black oak	65	48	
	hickory	60	---	
	white oak	65	48	
	eastern white pine	---	---	
5C:				
Berks	white oak	60	43	black oak, eastern white pine, white oak
	black oak	60	43	
	chestnut oak	60	43	
	eastern white pine	70	121	
	pitch pine	60	91	
	scarlet oak	60	43	
Weikert	white oak	50	34	eastern white pine, white oak
	chestnut oak	50	34	
	pitch pine	50	68	
	scarlet oak	50	34	
	Table Mountain pine	50	68	
	Virginia pine	50	68	
6F:				
Berks	northern red oak	65	48	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	65	48	
	hickory	60	---	
	black oak	65	48	
	white oak	---	---	
	eastern white pine	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
6F:				
Weikert	chestnut oak	55	38	eastern white pine, northern red oak, white oak
	northern red oak	55	38	
	hickory	50	---	
	eastern white pine	65	109	
	white oak	---	---	
	scarlet oak	---	---	
	Virginia pine	---	---	
	pitch pine	---	---	
7D, 7E:				
Berks	northern red oak	65	48	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	65	48	
	black oak	65	48	
	hickory	60	---	
	eastern white pine	---	---	
	white oak	---	---	
Weikert	chestnut oak	55	38	eastern white pine, northern red oak, white oak
	northern red oak	55	38	
	hickory	50	---	
	eastern white pine	65	109	
	white oak	---	---	
	scarlet oak	---	---	
	Virginia pine	---	---	
	pitch pine	---	---	
8E, 8F:				
Caneyville	northern red oak	71	53	black walnut, northern red oak, sugar maple, white oak
	black walnut	70	---	
	black locust	75	57	
	sugar maple	70	45	
	white oak	---	---	
9D:				
Caneyville	northern red oak	71	53	northern red oak, sugar maple, white oak
	white oak	70	52	
	hickory	65	48	
	black locust	75	57	
	sugar maple	70	45	
10C:				
Caneyville	northern red oak	71	53	black walnut, northern red oak, sugar maple
	black walnut	70	---	
	black locust	75	57	
	sugar maple	70	45	
Frederick	northern red oak	75	57	northern red oak, yellow-poplar
	hickory	70	52	
	yellow-poplar	85	81	
	black locust	80	62	
10D, 10E:				
Caneyville	northern red oak	71	53	black walnut, northern red oak, sugar maple, white oak
	black walnut	70	---	
	black locust	75	57	
	sugar maple	70	45	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
10D, 10E:				
Frederick	northern red oak	80	62	northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	hickory	75	57	
	black locust	85	67	
	white oak	---	---	
11B, 11C:				
Cottonbend	eastern white pine	85	155	black oak, eastern white pine, white oak
	white oak	75	57	
	black oak	75	57	
	scarlet oak	75	57	
	Virginia pine	75	118	
12B, 12C:				
Cottonbend	eastern white pine	85	155	black oak, eastern white pine, white oak
	white oak	75	57	
	black oak	75	57	
	scarlet oak	75	57	
	Virginia pine	75	118	
Urban land.				
13A:				
Coursey	northern red oak	75	57	black oak, eastern white pine, northern red oak
	American sycamore	80	---	
	black oak	75	57	
	eastern white pine	85	155	
14B:				
Coursey	northern red oak	75	57	black oak, eastern white pine, northern red oak
	American sycamore	80	---	
	black oak	75	57	
	eastern white pine	85	155	
Ogles	eastern white pine	80	144	eastern white pine, white oak, yellow-poplar
	white oak	70	52	
	scarlet oak	70	52	
	yellow-poplar	80	71	
	Virginia pine	70	109	
Shelocta	white oak	75	57	black oak, eastern white pine, northern red oak, white oak
	northern red oak	75	57	
	black oak	75	57	
	eastern white pine	85	155	
15F:				
Dekalb	chestnut oak	50	34	black oak, eastern white pine
	scarlet oak	50	34	
	Virginia pine	50	68	
	black oak	50	34	
	eastern white pine	60	97	
	Table Mountain pine	---	---	
	pitch pine	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
16D:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine
	black oak	60	43	
	scarlet oak	60	43	
	eastern white pine	70	121	
	Virginia pine	---	---	
	pitch pine	---	---	
Alticrest	chestnut oak	65	48	black oak, eastern white pine, white oak
	white oak	65	48	
	black oak	65	48	
	scarlet oak	65	48	
	eastern white pine	75	132	
	Virginia pine	---	---	
	pitch pine	---	---	
16E:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine
	black oak	60	43	
	scarlet oak	60	43	
	eastern white pine	70	121	
	Virginia pine	---	---	
	pitch pine	---	---	
	hickory	---	---	
Alticrest	chestnut oak	65	48	black oak, eastern white pine, white oak
	white oak	65	48	
	black oak	65	48	
	scarlet oak	65	48	
	eastern white pine	75	132	
	Virginia pine	---	---	
	pitch pine	---	---	
17D:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine, northern red oak, white oak
	white oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
	northern red oak	60	43	
	eastern white pine	70	121	
	pitch pine	---	---	
Lily	black oak	70	52	black oak, eastern white pine, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	70	52	
	chestnut oak	70	52	
	northern red oak	70	52	
	eastern white pine	80	144	
	scarlet oak	---	---	
	pitch pine	---	---	
McClung	black oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	northern red oak	80	62	
	white oak	80	62	
	scarlet oak	80	62	
	chestnut oak	80	62	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
18E:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine, northern red oak, white oak
	white oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
	northern red oak	60	43	
	eastern white pine	65	109	
	pitch pine	---	---	
	hickory	---	---	
Lily	black oak	70	52	black oak, eastern white pine, northern red oak, white oak
	white oak	70	52	
	chestnut oak	70	52	
	hickory	65	---	
	northern red oak	70	52	
	eastern white pine	80	144	
	scarlet oak	---	---	
	pitch pine	---	---	
19E:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine
	scarlet oak	60	43	
	hickory	55	---	
	Virginia pine	60	91	
	black oak	60	43	
	pitch pine	---	---	
	Table Mountain pine	---	---	
Rock outcrop.				
20E:				
Dekalb	chestnut oak	60	43	black oak, eastern white pine, northern red oak, white oak
	white oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
	northern red oak	60	43	
	eastern white pine	70	121	
	pitch pine	---	---	
	hickory	---	---	
Watahala	black oak	85	67	black oak, northern red oak, white oak, yellow-poplar
	scarlet oak	85	67	
	chestnut oak	85	67	
	white oak	85	67	
	yellow-poplar	95	98	
	northern red oak	85	67	
	pitch pine	---	---	
McClung	black oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	80	62	
	scarlet oak	80	62	
	chestnut oak	80	62	
	northern red oak	80	62	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
21A:				
Dunning	Virginia pine	75	115	swamp white oak
	swamp white oak	70	52	
	red maple	75	57	
	sycamore	75	57	
	pin oak	75	57	
22B, 22C, 22D:				
Escatawba	white oak	70	52	black oak, eastern white pine, white oak
	black oak	70	52	
	scarlet oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
	pitch pine	70	109	
23C:				
Faywood	northern red oak	70	52	black oak, northern red oak, sugar maple, white ash, yellow-poplar
	black oak	70	52	
	black locust	75	57	
	sugar maple	65	42	
	yellow-poplar	80	71	
	white ash	70	45	
Poplimento	northern red oak	80	62	black oak, northern red oak, sugar maple, white ash, yellow-poplar
	black oak	80	62	
	black locust	85	67	
	sugar maple	75	48	
	yellow-poplar	90	90	
	white ash	80	62	
23D, 23E:				
Faywood	northern red oak	70	52	black oak, northern red oak, sugar maple, white ash, white oak, yellow-poplar
	black locust	75	57	
	yellow-poplar	80	71	
	black oak	70	52	
	sugar maple	65	42	
	white ash	70	45	
	hickory	---	---	
	white oak	---	---	
	chestnut oak	---	---	
Poplimento	northern red oak	80	62	black oak, northern red oak, sugar maple, white ash, white oak, yellow-poplar
	black locust	85	67	
	yellow-poplar	90	90	
	black oak	80	62	
	sugar maple	75	48	
	white ash	80	62	
	hickory	---	---	
	white oak	---	---	
	chestnut oak	---	---	
24C:				
Frederick	northern red oak	80	62	black oak, northern red oak, yellow-poplar
	black oak	80	62	
	black locust	85	67	
	red maple	80	65	
	yellow-poplar	90	90	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
24D:				
Frederick	northern red oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	black oak	80	62	
	black locust	85	67	
	yellow-poplar	90	90	
	red maple	80	65	
	white oak	---	---	
25C:				
Frederick	northern red oak	80	62	black oak, northern red oak, yellow-poplar
	black oak	80	62	
	black locust	85	67	
	red maple	80	65	
	yellow-poplar	90	90	
Watahala	black oak	85	67	black oak, northern red oak, white oak, yellow-poplar
	yellow-poplar	95	98	
	northern red oak	85	67	
	white oak	85	67	
	scarlet oak	85	67	
	chestnut oak	85	67	
25D:				
Frederick	northern red oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	black oak	80	62	
	black locust	85	67	
	yellow-poplar	90	90	
	red maple	80	65	
	white oak	---	---	
Watahala	black oak	85	67	black oak, northern red oak, white oak, yellow-poplar
	white oak	85	67	
	scarlet oak	85	67	
	chestnut oak	85	67	
	yellow-poplar	95	98	
	northern red oak	85	67	
	pitch pine	---	---	
26C:				
Gilpin	white oak	70	52	black oak, eastern white pine, white oak
	black oak	70	52	
	scarlet oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
	pitch pine	70	109	
26D:				
Gilpin	white oak	70	52	black oak, eastern white pine, white oak
	scarlet oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
	pitch pine	70	109	
	black oak	70	52	
	Virginia pine	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
27A, 28A:				
Gladehill	yellow-poplar	95	98	black walnut, yellow-poplar
	American sycamore	85	---	
	black locust	85	---	
	black walnut	85	---	
	red maple	80	---	
29. Landfills				
30C:				
Lehew	chestnut oak	60	43	black oak, northern red oak
	northern red oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
Berks	white oak	60	43	black oak, eastern white pine, white oak
	black oak	60	43	
	scarlet oak	60	43	
	chestnut oak	60	43	
	eastern white pine	70	---	
	pitch pine	60	---	
30D, 30E:				
Lehew	chestnut oak	60	43	black oak, northern red oak
	black oak	60	43	
	scarlet oak	60	43	
	northern red oak	60	43	
	pitch pine	---	---	
	Virginia pine	---	---	
Berks	chestnut oak	65	48	black oak, eastern white pine, white oak
	white oak	65	48	
	scarlet oak	65	48	
	eastern white pine	75	132	
	Virginia pine	65	97	
	black oak	65	48	
	pitch pine	---	---	
31F:				
Lehew	chestnut oak	60	43	black oak, northern red oak
	black oak	60	43	
	scarlet oak	60	43	
	northern red oak	60	43	
	pitch pine	---	---	
	Virginia pine	---	---	
Berks	chestnut oak	65	48	black oak, eastern white pine, white oak
	white oak	65	48	
	scarlet oak	65	48	
	eastern white pine	75	132	
	Virginia pine	65	97	
	black oak	65	48	
	pitch pine	---	---	
Rock outcrop.				

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
32C:				
Lily	black oak	70	52	black oak, eastern white pine, northern red oak, white oak, yellow-poplar
	yellow-poplar	80	71	
	northern red oak	70	52	
	white oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
33D:				
Lily	black oak	70	52	black oak, eastern white pine, northern red oak, white oak, yellow-poplar
	northern red oak	70	52	
	white oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
	yellow-poplar	80	71	
	scarlet oak	---	---	
34C:				
Lily	black oak	70	52	black oak, eastern white pine, northern red oak, white oak, yellow-poplar
	yellow-poplar	80	71	
	northern red oak	70	52	
	white oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
McClung	black oak	80	62	black oak, eastern white pine, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	northern red oak	80	62	
	white oak	80	62	
	scarlet oak	80	62	
	eastern white pine	90	166	
Dekalb	chestnut oak	60	43	black oak, northern red oak, white oak
	northern red oak	60	43	
	white oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
	hickory	55	---	
35C:				
Macove	northern red oak	80	62	black oak, northern red oak, white oak
	white oak	80	62	
	black oak	80	62	
	chestnut oak	80	62	
	hickory	75	---	
	eastern white pine	90	166	
36A:				
Massanetta	yellow-poplar	95	98	black walnut, yellow-poplar
	hickory	80	---	
	black locust	85	---	
	American sycamore	85	---	
	black walnut	85	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
37D:				
McClung	black oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	80	62	
	scarlet oak	80	62	
	chestnut oak	80	62	
	northern red oak	80	62	
Watahala	black oak	85	67	black oak, northern red oak, white oak, yellow-poplar
	white oak	85	67	
	scarlet oak	85	67	
	chestnut oak	85	67	
	northern red oak	85	67	
	yellow-poplar	95	98	
	pitch pine	---	---	
Dekalb	chestnut oak	60	43	black oak, northern red oak, white oak
	white oak	60	43	
	black oak	60	43	
	scarlet oak	60	43	
	hickory	55	---	
	northern red oak	60	43	
	pitch pine	---	---	
38B, 38C:				
Murrill	northern red oak	80	62	northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	80	62	
	chestnut oak	80	62	
	black locust	85	---	
38D:				
Murrill	white oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	chestnut oak	80	62	
	black locust	85	---	
	northern red oak	80	62	
	yellow-poplar	90	90	
	black oak	---	---	
	scarlet oak	---	---	
	hickory	---	---	
39C:				
Murrill	northern red oak	80	62	northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	80	62	
	chestnut oak	80	62	
	black locust	85	---	
39D:				
Murrill	white oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	chestnut oak	80	62	
	black locust	85	---	
	northern red oak	80	62	
	yellow-poplar	90	90	
	black oak	---	---	
	scarlet oak	---	---	
	hickory	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
40B, 40C:				
Nicelytown	white oak	70	52	black oak, eastern white pine, white oak
	black oak	70	52	
	red maple	70	52	
	eastern white pine	80	144	
	Virginia pine	70	109	
41A:				
Ogles	eastern white pine	80	144	eastern white pine, white oak, yellow-poplar
	white oak	70	52	
	scarlet oak	70	52	
	yellow-poplar	80	71	
	Virginia pine	70	109	
	American sycamore	75	---	
42B, 43C:				
Oriskany	white oak	70	52	black oak, white oak, yellow-poplar
	black oak	70	52	
	scarlet oak	70	52	
	chestnut oak	70	52	
	yellow-poplar	80	71	
43D, 43E:				
Oriskany	black oak	75	57	black oak, northern red oak, white oak, yellow-poplar
	chestnut oak	75	57	
	white oak	75	57	
	scarlet oak	75	57	
	yellow-poplar	85	81	
	northern red oak	75	57	
	pitch pine	---	---	
44E:				
Oriskany	pitch pine	---	---	black oak, northern red oak, white oak, yellow-poplar
	yellow-poplar	80	71	
	black oak	70	52	
	chestnut oak	70	52	
	northern red oak	70	52	
	white oak	70	52	
	scarlet oak	70	52	
45C:				
Oriskany	white oak	75	57	black oak, northern red oak, white oak, yellow-poplar
	northern red oak	75	57	
	black oak	75	57	
	chestnut oak	75	57	
	yellow-poplar	85	81	
Murrill	northern red oak	80	62	black locust, northern red oak, white oak, yellow-poplar
	yellow-poplar	90	90	
	white oak	80	62	
	chestnut oak	80	62	
	black oak	80	62	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
45D, 45E:				
Oriskany	chestnut oak	75	57	black oak, northern red oak, white oak, yellow-poplar
	white oak	75	57	
	black oak	75	57	
	northern red oak	75	57	
	yellow-poplar	85	81	
	pitch pine	---	---	
	scarlet oak	---	---	
Murrill	black oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	chestnut oak	80	62	
	white oak	80	62	
	hickory	75	---	
	yellow-poplar	90	90	
	northern red oak	80	62	
	scarlet oak	---	---	
46A:				
Purdy	Virginia pine	75	115	swamp white oak, white ash
	pin oak	80	62	
	red maple	80	---	
	swamp white oak	75	57	
	white ash	80	---	
47C:				
Shelocta	white oak	75	57	black oak, eastern white pine, northern red oak, white oak
	northern red oak	75	57	
	black oak	75	57	
	eastern white pine	85	155	
Berks	white oak	60	43	black oak, eastern white pine, northern red oak, white oak
	northern red oak	60	43	
	black oak	60	43	
	chestnut oak	60	43	
	hickory	55	---	
	eastern white pine	70	121	
47D, 47E:				
Shelocta	white oak	75	57	black oak, eastern white pine, northern red oak, white oak
	black oak	75	57	
	eastern white pine	85	155	
	northern red oak	75	57	
	chestnut oak	---	---	
Berks	white oak	60	43	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	60	43	
	eastern white pine	70	121	
	northern red oak	60	43	
	black oak	60	43	
	hickory	55	---	
	Virginia pine	---	---	
	scarlet oak	---	---	
48B, 48C:				
Sugarhol	white oak	75	57	black oak, eastern white pine, white oak
	eastern white pine	85	155	
	black oak	75	57	
	scarlet oak	75	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
49. Udorthents-Rock outcrop				
50. Urban land-Udorthents				
51E:				
Watahala	black oak	85	67	black oak, northern red oak, white oak, yellow-poplar
	white oak	85	67	
	scarlet oak	85	67	
	chestnut oak	85	67	
	northern red oak	85	57	
	yellow-poplar	95	98	
	pitch pine	---	---	
Frederick	northern red oak	80	62	black oak, northern red oak, white oak, yellow-poplar
	hickory	75	---	
	black locust	85	---	
	yellow-poplar	90	90	
	white oak	---	---	
	black oak	80	62	
52D, 52E:				
Weikert	eastern white pine	60	97	black oak, eastern white pine, white oak
	chestnut oak	50	34	
	white oak	50	34	
	black oak	50	34	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	
	scarlet oak	---	---	
Berks	chestnut oak	60	43	black oak, eastern white pine, white oak
	white oak	60	43	
	scarlet oak	60	43	
	eastern white pine	70	121	
	Virginia pine	60	91	
	black oak	60	43	
	pitch pine	---	---	
Rough	chestnut oak	40	26	black oak, eastern white pine, white oak
	scarlet oak	40	26	
	eastern white pine	50	72	
	white oak	40	26	
	black oak	40	26	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	
52F:				
Weikert	chestnut oak	50	34	black oak, eastern white pine, white oak
	northern red oak	50	34	
	hickory	45	---	
	eastern white pine	60	97	
	white oak	---	---	
	scarlet oak	---	---	
	Virginia pine	---	---	
	pitch pine	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
52F:				
Berks	northern red oak	60	43	black oak, eastern white pine, northern red oak, white oak
	chestnut oak	60	43	
	black oak	60	43	
	hickory	55	---	
	white oak	---	---	
	eastern white pine	---	---	
Rough	chestnut oak	40	26	black oak, eastern white pine, white oak
	black oak	40	26	
	hickory	35	---	
	eastern white pine	50	72	
	white oak	---	---	
	scarlet oak	---	---	
	Virginia pine	---	---	
	pitch pine	---	---	
53F:				
Weikert	chestnut oak	45	30	black oak, eastern white pine, white oak
	eastern white pine	55	84	
	black oak	45	30	
	white oak	45	30	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	
	scarlet oak	---	---	
Rough	chestnut oak	35	---	black oak, eastern white pine, white oak
	scarlet oak	35	---	
	white oak	35	---	
	black oak	35	---	
	eastern white pine	45	---	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	
54F:				
Weikert	chestnut oak	45	30	---
	eastern white pine	55	84	
	black oak	45	30	
	white oak	45	30	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	
	scarlet oak	---	---	
Rock outcrop.				
Rough	chestnut oak	35	---	---
	scarlet oak	35	---	
	white oak	35	---	
	black oak	35	---	
	eastern white pine	45	---	
	Table Mountain pine	---	---	
	pitch pine	---	---	
	Virginia pine	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
55C, 55D:				
Wharton	white oak	70	52	black oak, northern red oak, white oak
	northern red oak	70	52	
	black oak	70	52	
	chestnut oak	70	52	
	Virginia pine	70	109	
Blairton	white oak	70	52	black oak, eastern white pine, northern red oak, white oak
	northern red oak	70	52	
	black oak	70	52	
	chestnut oak	70	52	
	eastern white pine	80	144	
	Virginia pine	70	109	
56A, 57A:				
Wolfgap	yellow-poplar	95	98	black walnut, yellow-poplar
	black locust	85	---	
	red maple	80	---	
	black walnut	85	---	
	American sycamore	85	---	
58B:				
Zoar	white oak	70	52	eastern white pine, white oak
	hickory	65	---	
	red maple	70	---	
	eastern white pine	80	144	
	Virginia pine	70	109	
59B:				
Zoar	white oak	70	52	eastern white pine, white oak
	hickory	65	---	
	red maple	70	---	
	eastern white pine	80	144	
	Virginia pine	70	109	
Urban land.				
W.				
Water				

Table 9.—Forestland Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Moderate Low strength	 0.50	Moderately suited Low strength	 0.50	Severe Low strength	 1.00
3C:							
Alticrest-------	50	Moderate Restrictive layer	 0.50	Moderately suited Slope	 0.50	Severe Low strength	 1.00
Dekalb----------	30	Moderate Restrictive layer	 0.50	Moderately suited Slope	 0.50	Severe Low strength	 1.00
4D:							
Berks-----------	80	Severe Restrictive layer Slope	 1.00 0.50	Poorly suited Slope	 1.00	Severe Low strength	 1.00
4E:							
Berks-----------	80	Severe Slope	 1.00	Poorly suited Slope	 1.00	Severe Low strength	 1.00
5C:							
Berks-----------	55	Moderate Restrictive layer	 0.50	Moderately suited Slope	 0.50	Severe Low strength	 1.00
Weikert---------	30	Severe Restrictive layer	 1.00	Moderately suited Slope Low strength	 0.50 0.50	Severe Low strength	 1.00
6F:							
Berks-----------	80	Severe Slope	 1.00	Poorly suited Slope	 1.00	Severe Low strength	 1.00
Weikert---------	15	Severe Slope	 1.00	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
7D:							
Berks-----------	70	Severe Restrictive layer Slope	 1.00 0.50	Poorly suited Slope	 1.00	Severe Low strength	 1.00
Weikert---------	25	Severe Restrictive layer Slope	 1.00 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
7E:							
Berks-----------	55	Severe Slope	 1.00	Poorly suited Slope	 1.00	Severe Low strength	 1.00
Weikert---------	40	Severe Slope	 1.00	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
8E, 8F:							
Caneyville------	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
9D:							
Caneyville------	85	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
10C:							
Caneyville------	45	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Frederick-------	45	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
10D:							
Caneyville------	45	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Frederick-------	45	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
10E:							
Caneyville------	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Frederick-------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
11B:							
Cottonbend------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
11C:							
Cottonbend------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
12B:							
Cottonbend------	50	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Urban land------	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend------	50	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Urban land------	35	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
13A:							
Coursey---------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
14B:							
Coursey---------	30	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Ogles-----------	30	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
Shelocta--------	30	Slight		Moderately suited		Severe	
				Low strength	0.50	Low strength	1.00
15F:							
Dekalb----------	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
16D:							
Dekalb----------	60	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
Alticrest-------	25	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
16E:							
Dekalb----------	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
Alticrest-------	25	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
17D:							
Dekalb----------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
Lily------------	30	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
McClung---------	15	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
18E:							
Dekalb----------	65	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
Lily------------	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50				

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19E:							
Dekalb----------	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
Rock outcrop----	30	Not rated		Not rated		Not rated	
20E:							
Dekalb----------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
Watahala--------	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Sandiness	0.50		
McClung---------	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
21A:							
Dunning---------	75	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Wetness	1.00	Wetness	0.50		
		Low strength	0.50	Low strength	0.50		
22B:							
Escatawba-------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Rock fragments	0.50		
22C:							
Escatawba-------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
				Rock fragments	0.50		
22D:							
Escatawba-------	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
				Rock fragments	0.50		
23C:							
Faywood---------	50	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Poplimento------	40	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
23D:							
Faywood---------	50	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Poplimento------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
23E:							
Faywood---------	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Poplimento------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
24C:							
Frederick-------	75	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
24D:							
Frederick-------	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
25C:							
Frederick-------	50	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
Watahala--------	40	Moderate		Moderately suited		Severe	
		Sandiness	0.50	Slope	0.50	Low strength	1.00
				Sandiness	0.50		
25D:							
Frederick-------	50	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
Watahala--------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Sandiness	0.50	Sandiness	0.50		
26C:							
Gilpin----------	80	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
26D:							
Gilpin----------	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
27A:							
Gladehill-------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
28A:							
Gladehill-------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
29:							
Landfills-------	85	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
30C:							
Lehew-----------	50	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
Berks-----------	45	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
30D:							
Lehew-----------	50	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
Berks-----------	45	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
30E:							
Lehew-----------	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
Berks-----------	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
31F:							
Lehew-----------	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
Berks-----------	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50				
33D:							
Lily------------	80	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
34C:							
Lily------------	45	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50				
McClung---------	30	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
Dekalb----------	20	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
35C:							
Macove----------	85	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Rock fragments	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
36A:							
Massanetta------	75	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
37D:							
McClung---------	45	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
Watahala--------	25	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Sandiness	0.50	Sandiness	0.50		
Dekalb----------	20	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50				
38B:							
Murrill---------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
38C:							
Murrill---------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
38D:							
Murrill---------	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
39C:							
Murrill---------	95	Moderate		Moderately suited		Moderate	
		Low strength	0.50	Slope	0.50	Low strength	0.50
				Low strength	0.50		
				Rock fragments	0.50		
39D:							
Murrill---------	95	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
				Low strength	0.50		
				Rock fragments	0.50		
40B:							
Nicelytown------	80	Slight		Moderately suited		Severe	
				Low strength	0.50	Low strength	1.00
40C:							
Nicelytown------	80	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
41A:							
Ogles-----------	80	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
42B:							
Oriskany--------	85	Severe		Moderately suited		Moderate	
		Stoniness	1.00	Rock fragments	0.50	Low strength	0.50

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
43C:							
Oriskany--------	75	Severe		Moderately suited		Moderate	
		Stoniness	1.00	Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
43D:							
Oriskany--------	75	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
43E:							
Oriskany--------	80	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
44E:							
Oriskany--------	85	Severe		Poorly suited		Moderate	
		Stoniness	1.00	Rock fragments	1.00	Low strength	0.50
		Slope	1.00	Slope	1.00		
45C:							
Oriskany--------	55	Severe		Moderately suited		Moderate	
		Stoniness	1.00	Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Murrill---------	35	Moderate		Moderately suited		Moderate	
		Low strength	0.50	Slope	0.50	Low strength	0.50
				Low strength	0.50		
				Rock fragments	0.50		
45D:							
Oriskany--------	55	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
				Rock fragments	0.50		
Murrill---------	35	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
				Low strength	0.50		
				Rock fragments	0.50		
45E:							
Oriskany--------	65	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
Murrill---------	25	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
		Low strength	0.50	Low strength	0.50		
46A:							
Purdy-----------	85	Severe		Poorly suited		Severe	
		Wetness	1.00	Ponding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47C:							
Shelocta--------	60	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
Berks-----------	20	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
47D:							
Shelocta--------	60	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Berks-----------	20	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
47E:							
Shelocta--------	70	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Berks-----------	25	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
48B:							
Sugarhol--------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
48C:							
Sugarhol--------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Sandiness	0.50		
Frederick-------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50				
52D:							
Weikert---------	35	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
52D:							
Berks-----------	34	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
Rough-----------	10	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
52E, 52F:							
Weikert---------	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Berks-----------	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
Rough-----------	15	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
53F:							
Weikert---------	65	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Rough-----------	25	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
54F:							
Weikert---------	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Rock outcrop----	25	Not rated		Not rated		Not rated	
Rough-----------	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
55C:							
Wharton---------	55	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
Blairton--------	40	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		
55D:							
Wharton---------	55	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Blairton--------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Wetness	0.50		
				Low strength	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
56A:							
Wolfgap----------	95	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
57A:							
Wolfgap----------	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
58B:							
Zoar------------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
59B:							
Zoar------------	45	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Urban land------	40	Not rated		Not rated		Not rated	
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Slight		Slight		Moderately suited	
						Low strength	0.50
3C:							
Alticrest-------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Dekalb----------	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
4D:							
Berks-----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
4E:							
Berks-----------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
5C:							
Berks-----------	55	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Weikert---------	30	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
6F:							
Berks-----------	80	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Weikert---------	15	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
7D:							
Berks-----------	70	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Weikert---------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
7E:							
Berks-----------	55	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Weikert---------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
8E, 8F:							
Caneyville------	85	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
9D:							
Caneyville------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
10C:							
Caneyville------	45	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Frederick-------	45	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
10D:							
Caneyville------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Frederick-------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
10E:							
Caneyville------	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Frederick-------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
11B:							
Cottonbend------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
11C:							
Cottonbend------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
12B:							
Cottonbend------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Urban land------	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend------	50	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Urban land------	35	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
13A:							
Coursey	80	Slight		Slight		Moderately suited	
						Low strength	0.50
14B:							
Coursey	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Ogles	30	Slight		Slight		Poorly suited	
						Flooding	1.00
Shelocta	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
15F:							
Dekalb	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
16D:							
Dekalb	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Alticrest	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
16E:							
Dekalb	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Alticrest	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
17D:							
Dekalb	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Lily	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
McClung	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
18E:							
Dekalb	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Lily	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
19E:							
Dekalb	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop	30	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
20E:							
Dekalb	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Watahala	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
McClung	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
21A:							
Dunning	75	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
22B:							
Escatawba	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Rock fragments	0.50
22C:							
Escatawba	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
						Rock fragments	0.50
22D:							
Escatawba	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Rock fragments	0.50
23C:							
Faywood	50	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Poplimento	40	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
23D:							
Faywood	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Poplimento	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
23E:							
Faywood	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Poplimento	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
24C:							
Frederick-------	75	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
24D:							
Frederick-------	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
25C:							
Frederick-------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Watahala--------	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
25D:							
Frederick-------	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Watahala--------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
26C:							
Gilpin----------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
26D:							
Gilpin----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
27A:							
Gladehill-------	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
28A:							
Gladehill-------	80	Slight		Slight		Moderately suited	
						Low strength	0.50
29:							
Landfills-------	85	Not rated		Not rated		Not rated	
30C:							
Lehew-----------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Berks-----------	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
30D:							
Lehew----------	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Berks----------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
30E:							
Lehew----------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Berks----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
31F:							
Lehew----------	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Berks----------	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily-----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
33D:							
Lily-----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
34C:							
Lily-----------	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
McClung---------	30	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Dekalb----------	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
35C:							
Macove----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Rock fragments	0.50
36A:							
Massanetta------	75	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
37D:							
McClung---------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Watahala--------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
37D:							
Dekalb----------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
38B:							
Murrill---------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
38C:							
Murrill---------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
38D:							
Murrill---------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
39C:							
Murrill---------	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
						Rock fragments	0.50
39D:							
Murrill---------	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Rock fragments	0.50
40B:							
Nicelytown------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
40C:							
Nicelytown------	80	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
41A:							
Ogles-----------	80	Slight		Slight		Poorly suited	
						Flooding	1.00
42B:							
Oriskany--------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Rock fragments	0.50
43C:							
Oriskany--------	75	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Rock fragments	0.50
						Slope	0.50
43D:							
Oriskany--------	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
43E:							
Oriskany--------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
44E:							
Oriskany--------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
45C:							
Oriskany--------	55	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Rock fragments	0.50
Murrill---------	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
						Rock fragments	0.50
45D:							
Oriskany--------	55	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Murrill---------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Rock fragments	0.50
45E:							
Oriskany--------	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Murrill---------	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Low strength	0.50
46A:							
Purdy-----------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	0.50
						Low strength	0.50
47C:							
Shelocta--------	60	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Berks-----------	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
47D:							
Shelocta--------	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
47D:							
Berks-----------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
47E:							
Shelocta--------	70	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks-----------	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
48B:							
Sugarhol--------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
48C:							
Sugarhol--------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Frederick-------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
52D:							
Weikert---------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks-----------	34	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rough-----------	10	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
52E:							
Weikert---------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks-----------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Rough-----------	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
52F:							
Weikert	40	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Berks	30	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Rough	15	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
53F:							
Weikert	65	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Rough	25	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
54F:							
Weikert	40	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Very severe Slope/erodibility	 0.95	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
55C:							
Wharton	55	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Moderately suited Slope Low strength	 0.50 0.50
Blairton	40	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Moderately suited Slope Wetness Low strength	 0.50 0.50 0.50
55D:							
Wharton	55	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Blairton	40	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Wetness Low strength	 1.00 0.50 0.50
56A:							
Wolfgap	95	Slight		Slight		Poorly suited Flooding Low strength	 1.00 0.50
57A:							
Wolfgap	95	Slight		Slight		Moderately suited Low strength	 0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58B:							
Zoar	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
59B:							
Zoar	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Urban land	40	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
3C:							
Alticrest-------	50	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Dekalb----------	30	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
4D:							
Berks-----------	80	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
4E:							
Berks-----------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
5C:							
Berks-----------	55	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Weikert---------	30	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
6F:							
Berks-----------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Weikert---------	15	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
7D:							
Berks-----------	70	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Weikert---------	25	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
7E:							
Berks-----------	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
7E:							
Weikert	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
8E, 8F:							
Caneyville	85	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
9D:							
Caneyville	85	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
10C:							
Caneyville	45	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
Frederick	45	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
10D:							
Caneyville	45	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
Frederick	45	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
10E:							
Caneyville	60	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Frederick	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
						Low strength	0.50
11B, 11C:							
Cottonbend	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
12B, 12C:							
Cottonbend	50	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Urban land	35	Not rated		Not rated		Not rated	
13A:							
Coursey	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
14B:							
Coursey---------	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Ogles-----------	30	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
Shelocta--------	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
15F:							
Dekalb----------	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
16D:							
Dekalb----------	60	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Alticrest-------	25	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
16E:							
Dekalb----------	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Alticrest-------	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
17D:							
Dekalb----------	40	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Lily------------	30	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
McClung---------	15	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
18E:							
Dekalb----------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Lily------------	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
19E:							
Dekalb----------	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
Rock outcrop----	30	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
20E:							
Dekalb----------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Watahala--------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
McClung---------	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
21A:							
Dunning---------	75	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
22B, 22C:							
Escatawba-------	80	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50	Rock fragments	0.50
22D:							
Escatawba-------	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Rock fragments	0.50
						Slope	0.50
23C:							
Faywood---------	50	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Poplimento------	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
23D:							
Faywood---------	50	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
Poplimento------	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
23E:							
Faywood---------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
23E:							
Poplimento	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
24C:							
Frederick	75	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
24D:							
Frederick	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
25C:							
Frederick	50	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Watahala	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Slope	0.50		
				Sandiness	0.50		
25D:							
Frederick	50	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Watahala	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Sandiness	0.50		
26C:							
Gilpin	80	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
26D:							
Gilpin	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
27A, 28A:							
Gladehill	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
29:							
Landfills	85	Not rated		Not rated		Not rated	
30C:							
Lehew	50	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Berks	45	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
30D:							
Lehew-----------	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Berks-----------	45	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
30E:							
Lehew-----------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Berks-----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
31F:							
Lehew-----------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
Berks-----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
33D:							
Lily------------	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
34C:							
Lily------------	45	Well suited		Moderately suited		Well suited	
				Slope	0.50		
McClung---------	30	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Dekalb----------	20	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
35C:							
Macove----------	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Rock fragments	0.50
				Slope	0.50		
36A:							
Massanetta------	75	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
37D:							
McClung----------	45	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
Watahala---------	25	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Sandiness	0.50		
Dekalb-----------	20	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
38B, 38C:							
Murrill----------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
38D:							
Murrill----------	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
39C:							
Murrill----------	95	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50	Rock fragments	0.50
39D:							
Murrill----------	95	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Rock fragments	0.50
						Slope	0.50
40B, 40C:							
Nicelytown-------	80	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
41A:							
Ogles------------	80	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
42B:							
Oriskany---------	85	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
				Slope	0.50		
43C:							
Oriskany---------	75	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
				Slope	0.50		
43D:							
Oriskany---------	75	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
				Slope	0.75	Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
43E:							
Oriskany--------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
44E:							
Oriskany--------	85	Unsuited		Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Slope	1.00	Slope	1.00
45C:							
Oriskany--------	55	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
				Slope	0.50		
Murrill---------	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50	Rock fragments	0.50
45D:							
Oriskany--------	55	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
				Slope	0.75	Slope	0.50
Murrill---------	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Rock fragments	0.50
						Slope	0.50
45E:							
Oriskany--------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
Murrill---------	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
						Low strength	0.50
46A:							
Purdy-----------	85	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
47C:							
Shelocta--------	60	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Berks-----------	20	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
47D:							
Shelocta--------	60	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
47D:							
Berks-----------	20	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
47E:							
Shelocta--------	70	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Berks-----------	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
48B, 48C:							
Sugarhol--------	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Frederick-------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
52D:							
Weikert---------	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
Berks-----------	34	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Rough-----------	10	Unsuited		Unsuited		Moderately suited	
		Restrictive layer	1.00	Rock fragments	1.00	Slope	0.50
		Rock fragments	0.75	Slope	0.75		
				Restrictive layer	0.50		
52E, 52F:							
Weikert---------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
52E, 52F:							
Berks-----------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Rough-----------	15	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00		
		Slope	0.50	Restrictive layer	0.50		
53F:							
Weikert---------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
Rough-----------	25	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00		
		Slope	0.50	Restrictive layer	0.50		
54F:							
Weikert---------	40	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
Rock outcrop----	25	Not rated		Not rated		Not rated	
Rough-----------	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Slope	0.75	Rock fragments	1.00		
		Rock fragments	0.75	Restrictive layer	0.50		
55C:							
Wharton---------	55	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Blairton--------	40	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
55D:							
Wharton---------	55	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
Blairton--------	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
56A, 57A:							
Wolfgap---------	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50
58B:							
Zoar------------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
59B:							
Zoar------------	45	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Urban land------	40	Not rated		Not rated		Not rated	
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:					
Alonzville	80	Well suited		Well suited	
3C:					
Alticrest	50	Well suited		Poorly suited	
				Restrictive layer	0.50
Dekalb	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
4D:					
Berks	80	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
4E:					
Berks	80	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
5C:					
Berks	55	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
Weikert	30	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
6F:					
Berks	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Weikert	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
7D:					
Berks	70	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
Weikert	25	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
7E:					
Berks	55	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
Weikert	40	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
8E, 8F:					
Caneyville----------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
9D:					
Caneyville----------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
10C:					
Caneyville----------	45	Well suited		Poorly suited	
				Restrictive layer	0.50
Frederick-----------	45	Well suited		Well suited	
10D:					
Caneyville----------	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
Frederick-----------	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
10E:					
Caneyville----------	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
Frederick-----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
11B, 11C:					
Cottonbend----------	85	Well suited		Well suited	
12B, 12C:					
Cottonbend----------	50	Well suited		Well suited	
Urban land----------	35	Not rated		Not rated	
13A:					
Coursey-------------	80	Well suited		Well suited	
14B:					
Coursey-------------	30	Well suited		Well suited	
Ogles---------------	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
Shelocta------------	30	Well suited		Well suited	
15F:					
Dekalb--------------	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
16D:					
Dekalb	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
Alticrest	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
16E:					
Dekalb	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
Alticrest	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
17D:					
Dekalb	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
Lily	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
McClung	15	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
18E:					
Dekalb	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
Lily	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
19E:					
Dekalb	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
Watahala	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
McClung	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
21A:					
Dunning-------------	75	Well suited		Unsuited	
				Wetness	1.00
22B, 22C:					
Escatawba-----------	80	Poorly suited		Well suited	
		Rock fragments	0.50		
22D:					
Escatawba-----------	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
23C:					
Faywood-------------	50	Well suited		Poorly suited	
				Restrictive layer	0.50
Poplimento----------	40	Well suited		Well suited	
23D:					
Faywood-------------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
Poplimento----------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
23E:					
Faywood-------------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
Poplimento----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
24C:					
Frederick-----------	75	Well suited		Well suited	
24D:					
Frederick-----------	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
25C:					
Frederick-----------	50	Well suited		Well suited	
Watahala------------	40	Poorly suited		Well suited	
		Rock fragments	0.50		
25D:					
Frederick-----------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Watahala------------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
26C:					
Gilpin--------------	80	Well suited		Well suited	

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
26D:					
Gilpin--------------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
27A, 28A:					
Gladehill-----------	80	Well suited		Well suited	
29:					
Landfills-----------	85	Not rated		Not rated	
30C:					
Lehew---------------	50	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
Berks---------------	45	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
30D:					
Lehew---------------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
Berks---------------	45	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
30E:					
Lehew---------------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
Berks---------------	40	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
31F:					
Lehew---------------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Berks---------------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
				Rock fragments	0.50
Rock outcrop--------	10	Not rated		Not rated	
32C:					
Lily----------------	85	Well suited		Poorly suited	
				Restrictive layer	0.50
33D:					
Lily----------------	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
34C:					
Lily----------------	45	Well suited		Poorly suited	
				Restrictive layer	0.50
McClung-------------	30	Well suited		Well suited	
Dekalb--------------	20	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
35C:					
Macove--------------	85	Poorly suited		Well suited	
		Rock fragments	0.50		
36A:					
Massanetta----------	75	Well suited		Well suited	
37D:					
McClung-------------	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Watahala------------	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Dekalb--------------	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
38B, 38C:					
Murrill-------------	85	Well suited		Well suited	
38D:					
Murrill-------------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
39C:					
Murrill-------------	95	Poorly suited		Well suited	
		Rock fragments	0.50		
39D:					
Murrill-------------	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
40B, 40C:					
Nicelytown----------	80	Well suited		Well suited	
41A:					
Ogles---------------	80	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
42B:					
Oriskany------------	85	Poorly suited		Well suited	
		Rock fragments	0.50		
43C:					
Oriskany------------	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
43D:					
Oriskany------------	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50	Rock fragments	0.50
43E:					
Oriskany------------	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
44E:					
Oriskany------------	85	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	1.00	Slope	1.00
45C:					
Oriskany------------	55	Poorly suited		Well suited	
		Rock fragments	0.50		
Murrill-------------	35	Poorly suited		Well suited	
		Rock fragments	0.50		
45D:					
Oriskany------------	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Murrill-------------	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
45E:					
Oriskany------------	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Murrill-------------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
46A:					
Purdy---------------	85	Well suited		Unsuited	
				Wetness	1.00
47C:					
Shelocta------------	60	Well suited		Well suited	
Berks---------------	20	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
47D:					
Shelocta------------	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Berks---------------	20	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
47E:					
Shelocta	70	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Berks	25	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
48B, 48C:					
Sugarhol	85	Well suited		Well suited	
49:					
Udorthents	85	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
50:					
Urban land	50	Not rated		Not rated	
Udorthents	40	Not rated		Not rated	
51E:					
Watahala	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Frederick	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
52D:					
Weikert	35	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
Berks	34	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
Rough	10	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Restrictive layer	0.50	Slope	0.50
		Rock fragments	0.50		
52E:					
Weikert	40	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
Berks	30	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
Rough	15	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Restrictive layer	0.50	Slope	1.00
		Rock fragments	0.50		

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
52F:					
Weikert	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Berks	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Rough	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	0.50	Restrictive layer	1.00
		Rock fragments	0.50		
53F:					
Weikert	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Rough	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	0.50	Restrictive layer	1.00
		Rock fragments	0.50		
54F:					
Weikert	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Rock outcrop	25	Not rated		Not rated	
Rough	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	0.50	Restrictive layer	1.00
		Rock fragments	0.50		
55C:					
Wharton	55	Well suited		Well suited	
Blairton	40	Well suited		Well suited	
55D:					
Wharton	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Blairton	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
56A, 57A:					
Wolfgap	95	Well suited		Well suited	
58B:					
Zoar	85	Well suited		Well suited	
59B:					
Zoar	45	Well suited		Well suited	
Urban land	40	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 9.—Forestland Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
1A, 2A:					
Alonzville	80	Low		Low	
		Texture/rock fragments	0.10		
3C:					
Alticrest	50	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
Dekalb	30	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
4D:					
Berks	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
4E:					
Berks	80	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
5C:					
Berks	55	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Weikert	30	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
6F:					
Berks	80	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Weikert	15	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
7D:					
Berks	70	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Weikert	25	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
7E:					
Berks	55	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Weikert	40	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
8E, 8F, 9D:					
Caneyville	85	Moderate		Low	
		Texture/rock fragments	0.50		
10C, 10D:					
Caneyville	45	Moderate		Low	
		Texture/rock fragments	0.50		
Frederick	45	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
10E:					
Caneyville	60	Moderate		Low	
		Texture/rock fragments	0.50		
Frederick	35	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
11B, 11C:					
Cottonbend	85	Moderate		Low	
		Texture/rock fragments	0.50		
12B, 12C:					
Cottonbend	50	Moderate		Low	
		Texture/rock fragments	0.50		
Urban land	35	Not rated		Not rated	

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
13A:					
Coursey	80	Low		Low	
		Texture/rock fragments	0.10		
14B:					
Coursey	30	Low		Low	
		Texture/rock fragments	0.10		
Ogles	30	Low		Low	
		Texture/rock fragments	0.10		
Shelocta	30	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
15F:					
Dekalb	60	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
16D:					
Dekalb	60	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
Alticrest	25	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
16E:					
Dekalb	60	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Alticrest	25	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
17D:					
Dekalb	40	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
Lily	30	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
17D:					
McClung	15	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
18E:					
Dekalb	65	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Lily	20	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
19E:					
Dekalb	60	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Watahala	30	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
McClung	20	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
21A:					
Dunning	75	Low		High	
		Texture/surface depth/rock fragments	0.10	Wetness	1.00
22B, 22C:					
Escatawba	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
22D:					
Escatawba	75	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
23C, 23D:					
Faywood-------------	50	Moderate		Low	
		Texture/rock fragments	0.50		
Poplimento----------	40	Moderate		Low	
		Texture/rock fragments	0.50		
23E:					
Faywood-------------	45	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Poplimento----------	35	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
24C, 24D:					
Frederick-----------	75	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
25C, 25D:					
Frederick-----------	50	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Watahala------------	40	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Soil reaction	0.50
26C:					
Gilpin--------------	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
26D:					
Gilpin--------------	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
27A, 28A:					
Gladehill-----------	80	Low		Low	
		Texture/rock fragments	0.10		
29:					
Landfills-----------	85	Not rated		Not rated	
30C, 30D:					
Lehew---------------	50	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
30C, 30D:					
Berks	45	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
30E:					
Lehew	45	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Berks	40	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
31F:					
Lehew	45	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Berks	40	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rock outcrop	10	Not rated		Not rated	
32C:					
Lily	85	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
33D:					
Lily	80	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
34C:					
Lily	45	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
McClung	30	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
Dekalb	20	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
35C:					
Macove--------------	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
36A:					
Massanetta----------	75	Low		Low	
		Texture/rock fragments	0.10		
37D:					
McClung-------------	45	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
Watahala------------	25	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Soil reaction	0.50
Dekalb--------------	20	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
38B, 38C, 38D:					
Murrill-------------	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
39C, 39D:					
Murrill-------------	95	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
40B, 40C:					
Nicelytown----------	80	Moderate		Low	
		Texture/rock fragments	0.50		
41A:					
Ogles---------------	80	Low		Low	
		Texture/rock fragments	0.10		
42B:					
Oriskany------------	85	Moderate		Low	
		Texture/rock fragments	0.50		
43C, 43D:					
Oriskany------------	75	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
43E:					
Oriskany	80	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
44E:					
Oriskany	85	High		Low	
		Texture/slope/ rock fragments	1.00		
45C, 45D:					
Oriskany	55	Moderate		Low	
		Texture/rock fragments	0.50		
Murrill	35	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
45E:					
Oriskany	65	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Murrill	25	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
46A:					
Purdy	85	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
47C, 47D:					
Shelocta	60	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Berks	20	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
47E:					
Shelocta	70	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Berks	25	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
48B, 48C:					
Sugarhol	85	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Soil reaction	0.50
49:					
Udorthents	85	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
50:					
Urban land	50	Not rated		Not rated	
Udorthents	40	Not rated		Not rated	
51E:					
Watahala	45	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Frederick	35	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
52D:					
Weikert	35	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Berks	34	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Rough	10	High		Low	
		Texture/surface depth/rock fragments	1.00		
52E, 52F:					
Weikert	40	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Berks	30	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rough	15	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
53F:					
Weikert-------------	65	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rough---------------	25	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
54F:					
Weikert-------------	40	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Available water	0.50
Rock outcrop--------	25	Not rated		Not rated	
Rough---------------	20	High		High	
		Texture/slope/ surface depth/ rock fragments	1.00	Available water	1.00
55C, 55D:					
Wharton-------------	55	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Blairton------------	40	Moderate		Low	
		Texture/rock fragments	0.50		
56A, 57A:					
Wolfgap-------------	95	Low		Low	
		Texture/rock fragments	0.10		
58B:					
Zoar----------------	85	Moderate		Low	
		Texture/rock fragments	0.50		
59B:					
Zoar----------------	45	Moderate		Low	
		Texture/rock fragments	0.50		
Urban land----------	40	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	

Table 10.—Recreational Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
1A:							
Alonzville	80	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Gravel content	0.56
2A:							
Alonzville	80	Not limited		Not limited		Somewhat limited	
						Gravel content	0.56
3C:							
Alticrest	50	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	0.76
						Gravel content	0.68
Dekalb	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	0.76
						Depth to bedrock	0.46
4D, 4E:							
Berks	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
5C:							
Berks	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
Weikert	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
6F:							
Berks	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
Weikert	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
7D:							
Berks	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
		Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.71

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
7D:							
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
7E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
		Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.71
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
8E, 8F, 9D:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.54
10C:							
Caneyville	45	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.37	Slope	0.37	Slow water movement	0.96
						Depth to bedrock	0.54
Frederick	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.22
10D:							
Caneyville	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.54
Frederick	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22
10E:							
Caneyville	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.54
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
11B:							
Cottonbend	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.78
11C:							
Cottonbend	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.78
12B:							
Cottonbend	50	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.78
Urban land	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.78
Urban land	35	Not rated		Not rated		Not rated	
13A:							
Coursey	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Depth to saturated zone	0.39				
14B:							
Coursey	30	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Slope	0.88
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Ogles	30	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Large stones content	0.32	Large stones content	1.00
		Large stones content	0.32	Gravel content	0.04	Gravel content	1.00
		Gravel content	0.04			Flooding	0.60
Shelocta	30	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.78
15F:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Depth to bedrock	0.46
16D, 16E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	0.76
						Depth to bedrock	0.46

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
16D, 16E:							
Alticrest	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	0.76
						Gravel content	0.68
17D:							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	0.76
						Depth to bedrock	0.46
Lily	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Large stones content	0.76
McClung	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
18E:							
Dekalb	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	0.76
						Depth to bedrock	0.46
Lily	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Large stones content	0.76
19E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Depth to bedrock	0.46
Rock outcrop	30	Not rated		Not rated		Not rated	
20E:							
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.34
Watahala	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
McClung	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
21A:							
Dunning	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Slow water movement	0.96	Slow water movement	0.96
		Slow water movement	0.96			Flooding	0.60
22B:							
Escatawba	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.94	Large stones content	0.94	Large stones content	0.94
		Slow water movement	0.26	Slow water movement	0.26	Slope	0.88
						Slow water movement	0.26
22C:							
Escatawba	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.94	Large stones content	0.94	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	0.94
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
22D:							
Escatawba	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.94	Large stones content	0.94	Large stones content	0.94
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
23C:							
Faywood	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.50	Slow water movement	0.50	Depth to bedrock	0.90
						Slow water movement	0.50
Poplimento	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
23D:							
Faywood	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.50	Slow water movement	0.50	Depth to bedrock	0.90
						Slow water movement	0.50
Poplimento	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
23E:							
Faywood-------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.50	Slow water movement	0.50	Depth to bedrock	0.90
						Slow water movement	0.50
Poplimento----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
24C:							
Frederick-----------	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.22
24D:							
Frederick-----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22
25C:							
Frederick-----------	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
Watahala------------	40	Very limited		Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
25D:							
Frederick-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
Watahala------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
26C:							
Gilpin--------------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.56
						Depth to bedrock	0.29
26D:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
						Depth to bedrock	0.29
27A:							
Gladehill-----------	80	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
28A:							
Gladehill-----------	80	Not limited		Not limited		Not limited	

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
29:							
Landfills	85	Not rated		Not rated		Not rated	
30C:							
Lehew	50	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Large stones content	0.76
Berks	45	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Gravel content	0.61	Gravel content	0.61	Large stones content	0.76
30D:							
Lehew	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Large stones content	0.76
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.61	Gravel content	0.61	Large stones content	0.76
30E:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Large stones content	0.76
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.61	Gravel content	0.61	Large stones content	0.76
31F:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
Rock outcrop	10	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
32C:							
Lily	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.29
33D:							
Lily	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Large stones content	0.76
34C:							
Lily	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.29
McClung	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Dekalb	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.34
35C:							
Macove	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.94	Large stones content	0.94	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Large stones content	0.94
36A:							
Massanetta	75	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Flooding	0.60
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
37D:							
McClung	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Watahala	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
Dekalb	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.34
38B:							
Murrill	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.56

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
38C:							
Murrill-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.56
38D:							
Murrill-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
39C:							
Murrill-------------	95	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
39D:							
Murrill-------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
40B:							
Nicelytown----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Slow water movement	0.35	Slow water movement	0.35	Slope	0.88
						Slow water movement	0.35
40C:							
Nicelytown----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.98
		Slow water movement	0.35	Slow water movement	0.35	Slow water movement	0.35
41A:							
Ogles---------------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Large stones content	0.32	Large stones content	1.00
		Large stones content	0.32	Gravel content	0.04	Gravel content	1.00
		Gravel content	0.04			Flooding	0.60
42B:							
Oriskany------------	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
						Slope	0.88
43C:							
Oriskany------------	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
43D:							
Oriskany	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
43E:							
Oriskany	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
44E:							
Oriskany	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
45C:							
Oriskany	55	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
Murrill	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
45D:							
Oriskany	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
Murrill	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
45E:							
Oriskany	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Murrill	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
46A:							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
47C:							
Shelocta	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.78
Berks	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
47D:							
Shelocta	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.78
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
47E:							
Shelocta	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.78
Berks	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
48B:							
Sugarhol	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
48C:							
Sugarhol	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
49:							
Udorthents	85	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
50:							
Urban land	50	Not rated		Not rated		Not rated	
Udorthents	40	Not rated		Not rated		Not rated	
51E:							
Watahala	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Large stones content	0.47
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
		Gravel content	0.08	Gravel content	0.08	Large stones content	0.47

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
52D:							
Weikert----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Berks------------------	34	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
Rough------------------	10	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
52E:							
Weikert----------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Berks------------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.61	Gravel content	0.61	Gravel content	1.00
						Depth to bedrock	0.71
Rough------------------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
52F:							
Weikert----------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
Berks------------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Gravel content	1.00
		Gravel content	0.61	Gravel content	0.61	Large stones content	0.76
Rough------------------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
53F:							
Weikert----------------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Rough------------------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
54F:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
55C:							
Wharton	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.50	Slow water movement	0.50	Slow water movement	0.50
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07
Blairton	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.81	Slope	0.63	Slope	1.00
		Slope	0.63	Depth to saturated zone	0.48	Depth to saturated zone	0.81
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
55D:							
Wharton	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.50	Slow water movement	0.50	Slow water movement	0.50
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07
Blairton	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Depth to saturated zone	0.81
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
56A:							
Wolfgap	95	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
57A:							
Wolfgap	95	Not limited		Not limited		Not limited	
58B:							
Zoar	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Slow water movement	0.50	Slow water movement	0.50	Slope	0.88
						Slow water movement	0.50

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
59B:							
Zoar	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Slow water movement	0.50	Slow water movement	0.50	Slope	0.88
						Slow water movement	0.50
Urban land	40	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Not limited		Not limited		Not limited	
3C:							
Alticrest-------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.76	Large stones content	0.76	Droughty	0.71
						Slope	0.63
						Depth to bedrock	0.46
Dekalb----------	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Droughty	1.00
						Slope	0.63
						Depth to bedrock	0.46
4D:							
Berks-----------	80	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
4E:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
5C:							
Berks-----------	55	Not limited		Not limited		Somewhat limited	
						Droughty	0.75
						Depth to bedrock	0.71
						Slope	0.63
Weikert---------	30	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.63
6F:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
Weikert---------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
7D:							
Berks-----------	70	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Droughty	0.75
						Depth to bedrock	0.71

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
7D:							
Weikert	25	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Depth to bedrock	1.00
		Large stones content	0.47			Slope	1.00
						Droughty	1.00
7E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Droughty	0.75
						Depth to bedrock	0.71
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.47	Large stones content	0.47	Slope	1.00
						Droughty	1.00
8E:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.54
8F:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.54
9D:							
Caneyville	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00			Depth to bedrock	0.54
10C:							
Caneyville	45	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.54
						Slope	0.37
Frederick	45	Not limited		Not limited		Somewhat limited	
						Slope	0.37
10D:							
Caneyville	45	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00			Depth to bedrock	0.54
Frederick	45	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
10E:							
Caneyville	60	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.54
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
11B:							
Cottonbend	85	Not limited		Not limited		Not limited	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
11C:							
Cottonbend------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.37
12B:							
Cottonbend------	50	Not limited		Not limited		Not limited	
Urban land------	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend------	50	Not limited		Not limited		Somewhat limited	
						Slope	0.37
Urban land------	35	Not rated		Not rated		Not rated	
13A:							
Coursey---------	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
14B:							
Coursey---------	30	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
Ogles-----------	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.32	Large stones content	0.32	Large stones content	1.00
						Droughty	0.99
						Flooding	0.60
Shelocta--------	30	Not limited		Not limited		Not limited	
15F:							
Dekalb----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Droughty	1.00
						Depth to bedrock	0.46
16D:							
Dekalb----------	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Droughty	1.00
						Depth to bedrock	0.46
Alticrest-------	25	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Droughty	0.71
						Depth to bedrock	0.46
16E:							
Dekalb----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	1.00
						Depth to bedrock	0.46
Alticrest-------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	0.71
						Depth to bedrock	0.46

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
17D:							
Dekalb	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Droughty	1.00
						Depth to bedrock	0.46
Lily	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Depth to bedrock	0.29
						Gravel content	0.01
McClung	15	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
18E:							
Dekalb	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	1.00
						Depth to bedrock	0.46
Lily	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Depth to bedrock	0.29
						Gravel content	0.01
19E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00			Droughty	1.00
				Slope	1.00	Depth to bedrock	0.46
Rock outcrop	30	Not rated		Not rated		Not rated	
20E:							
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.46
Watahala	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	1.00
McClung	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21A:							
Dunning	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
22B:							
Escatawba	80	Somewhat limited		Somewhat limited		Not limited	
		Large stones content	0.94	Large stones content	0.94		

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
22C:							
Escatawba-------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.94	Large stones content	0.94	Slope	0.63
22D:							
Escatawba-------	75	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.94	Slope	1.00
		Large stones content	0.94				
23C:							
Faywood---------	50	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.90
						Droughty	0.74
						Slope	0.63
Poplimento------	40	Not limited		Not limited		Somewhat limited	
						Slope	0.63
23D:							
Faywood---------	50	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00			Depth to bedrock	0.90
						Droughty	0.74
Poplimento------	40	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
23E:							
Faywood---------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.90
						Droughty	0.74
Poplimento------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
24C:							
Frederick-------	75	Not limited		Not limited		Somewhat limited	
						Slope	0.63
24D:							
Frederick-------	75	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
25C:							
Frederick-------	50	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.08
Watahala--------	40	Not limited		Not limited		Very limited	
						Gravel content	1.00
						Slope	0.63
25D:							
Frederick-------	50	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Gravel content	0.08

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
25D:							
Watahala	40	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Gravel content	1.00
26C:							
Gilpin	80	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.29
26D:							
Gilpin	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.29
27A:							
Gladehill	80	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
28A:							
Gladehill	80	Not limited		Not limited		Not limited	
29:							
Landfills	85	Not rated		Not rated		Not rated	
30C:							
Lehew	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.76	Large stones content	0.76	Droughty	0.97
						Depth to bedrock	0.71
						Slope	0.63
Berks	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.76	Large stones content	0.76	Droughty	0.75
						Depth to bedrock	0.71
						Slope	0.63
30D:							
Lehew	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Droughty	0.97
						Depth to bedrock	0.71
Berks	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Droughty	0.75
						Depth to bedrock	0.71
30E:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	0.97
						Depth to bedrock	0.71
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	0.75
						Depth to bedrock	0.71

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
31F:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Droughty	0.97
						Depth to bedrock	0.71
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Droughty	0.75
						Depth to bedrock	0.71
Rock outcrop	10	Not rated		Not rated		Not rated	
32C:							
Lily	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.29
						Gravel content	0.01
33D:							
Lily	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Depth to bedrock	0.29
						Gravel content	0.01
34C:							
Lily	45	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.29
						Gravel content	0.01
McClung	30	Not limited		Not limited		Somewhat limited	
						Slope	0.63
Dekalb	20	Not limited		Not limited		Very limited	
						Droughty	1.00
						Slope	0.63
						Depth to bedrock	0.46
35C:							
Macove	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.94	Large stones content	0.94	Slope	0.63
						Droughty	0.32
						Large stones content	0.03
36A:							
Massanetta	75	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
37D:							
McClung	45	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
Watahala	25	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Gravel content	1.00

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
37D:							
Dekalb----------	20	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.46
38B:							
Murrill---------	85	Not limited		Not limited		Not limited	
38C:							
Murrill---------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
38D:							
Murrill---------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
39C:							
Murrill---------	95	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
						Slope	0.63
39D:							
Murrill---------	95	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Large stones content	1.00
40B:							
Nicelytown------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
40C:							
Nicelytown------	80	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.63
41A:							
Ogles-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.32	Large stones content	0.32	Large stones content	1.00
						Droughty	0.99
						Flooding	0.60
42B:							
Oriskany--------	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
43C:							
Oriskany--------	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Slope	0.63

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
43D:							
Oriskany--------	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00			Large stones content	1.00
43E:							
Oriskany--------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	1.00
44E:							
Oriskany--------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	1.00
45C:							
Oriskany--------	55	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
						Slope	0.63
Murrill---------	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.76	Large stones content	0.76	Large stones content	1.00
						Slope	0.63
45D:							
Oriskany--------	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Large stones content	1.00
Murrill---------	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.76	Slope	1.00
		Large stones content	0.76			Large stones content	1.00
45E:							
Oriskany--------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	1.00
Murrill---------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	1.00
46A:							
Purdy-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
47C:							
Shelocta--------	60	Not limited		Not limited		Somewhat limited	
						Slope	0.63
Berks-----------	20	Not limited		Not limited		Somewhat limited	
						Droughty	0.75
						Depth to bedrock	0.71
						Slope	0.63
47D:							
Shelocta--------	60	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
Berks-----------	20	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
47E:							
Shelocta--------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Berks-----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
48B:							
Sugarhol--------	85	Not limited		Not limited		Not limited	
48C:							
Sugarhol--------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
Frederick-------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.08
52D:							
Weikert---------	35	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
52D:							
Berks-----------	34	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
Rough-----------	10	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
52E:							
Weikert---------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
Berks-----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.75
						Depth to bedrock	0.71
Rough-----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
52F:							
Weikert---------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
						Droughty	1.00
Berks-----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.76	Large stones content	0.76	Droughty	0.75
						Depth to bedrock	0.71
Rough-----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.76	Large stones content	0.76	Slope	1.00
						Droughty	1.00
53F:							
Weikert---------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
Rough-----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
54F:							
Weikert---------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
54F:							
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
55C:							
Wharton	55	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
						Depth to saturated zone	0.03
Blairton	40	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
		Depth to saturated zone	0.11	Depth to saturated zone	0.11	Depth to saturated zone	0.48
						Depth to bedrock	0.01
55D:							
Wharton	55	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00			Depth to saturated zone	0.03
Blairton	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.11	Depth to saturated zone	0.48
		Depth to saturated zone	0.11			Depth to bedrock	0.01
56A:							
Wolfgap	95	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
57A:							
Wolfgap	95	Not limited		Not limited		Not limited	
58B:							
Zoar	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
59B:							
Zoar	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Urban land	40	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Alonzville--------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
2A:							
Alonzville--------	80	Not limited		Not limited		Not limited	
3C:							
Alticrest---------	50	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.63	Depth to hard bedrock	0.46
Dekalb------------	30	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.63	Depth to hard bedrock	0.46
4D, 4E:							
Berks-------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
5C:							
Berks-------------	55	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.71
Weikert-----------	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	1.00
6F:							
Berks-------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Weikert-----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
7D:							
Berks-------------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
7D:							
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
7E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
8E, 8F, 9D:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
10C:							
Caneyville	45	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to hard bedrock	0.54
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
Frederick	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
10D:							
Caneyville	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Frederick	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
10E:							
Caneyville	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
11B:							
Cottonbend	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
11C:							
Cottonbend	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
12B:							
Cottonbend	50	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Urban land	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Urban land	35	Not rated		Not rated		Not rated	
13A:							
Coursey	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
14B:							
Coursey	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
						Slope	0.12
Ogles	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.72	Depth to saturated zone	0.82	Large stones content	0.72
				Large stones content	0.72		
Shelocta	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
15F:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
16D, 16E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Alticrest	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
17D:							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Lily	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
McClung	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
18E:							
Dekalb	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Lily	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
19E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	30	Not rated		Not rated		Not rated	
20E:							
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Watahala	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
McClung	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21A:							
Dunning	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
22B:							
Escatawba	80	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	0.99	Slope	0.12

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
22C:							
Escatawba	80	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to saturated zone	0.99	Slope	1.00
				Slope	0.63		
22D:							
Escatawba	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to saturated zone	0.99		
23C:							
Faywood	50	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.90
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Poplimento	40	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Slope	0.63	Slope	1.00
		Slope	0.63	Shrink-swell	0.50	Shrink-swell	1.00
23D:							
Faywood	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Poplimento	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
23E:							
Faywood	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Poplimento	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
24C:							
Frederick	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
24D:							
Frederick	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
25C:							
Frederick	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
25C:							
Watahala----------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Shrink-swell	0.50		
25D:							
Frederick---------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Watahala----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
26C:							
Gilpin------------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to soft bedrock	0.29		
26D:							
Gilpin------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.29		
27A:							
Gladehill---------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
28A:							
Gladehill---------	80	Not limited		Not limited		Not limited	
29:							
Landfills---------	85	Not rated		Not rated		Not rated	
30C:							
Lehew-------------	50	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.71
Berks-------------	45	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.71
30D:							
Lehew-------------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Berks-------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
30E:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
31F:							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Berks	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Rock outcrop	10	Not rated		Not rated		Not rated	
32C:							
Lily	85	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Slope	0.63	Depth to hard bedrock	0.29
33D:							
Lily	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
34C:							
Lily	45	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Slope	0.63	Depth to hard bedrock	0.29
McClung	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Dekalb	20	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.63	Depth to hard bedrock	0.46
35C:							
Macove	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Large stones content	0.03	Large stones content	0.03	Large stones content	0.03

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
36A:							
Massanetta	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
37D:							
McClung	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Watahala	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
Dekalb	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
38B:							
Murrill	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
38C:							
Murrill	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
38D:							
Murrill	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
39C:							
Murrill	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
39D:							
Murrill	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
40B:							
Nicelytown	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
						Slope	0.12
40C:							
Nicelytown	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.98
41A:							
Ogles	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.72	Depth to saturated zone	0.82	Large stones content	0.72
				Large stones content	0.72		

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
42B:							
Oriskany----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.78	Large stones content	0.78	Large stones content	0.78
						Slope	0.12
43C:							
Oriskany----------	75	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.78	Large stones content	0.78	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	0.78
43D:							
Oriskany----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	0.78
43E:							
Oriskany----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	0.78
44E:							
Oriskany----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Large stones content	0.96
45C:							
Oriskany----------	55	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.78	Large stones content	0.78	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	0.78
Murrill-----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
45D:							
Oriskany----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	0.78
Murrill-----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
45E:							
Oriskany----------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	0.78
Murrill-----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
46A:							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
47C:							
Shelocta	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Berks	20	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.71
47D:							
Shelocta	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
47E:							
Shelocta	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Berks	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
48B:							
Sugarhol	85	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.01			Slope	0.12
						Shrink-swell	0.01
48C:							
Sugarhol	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.01			Shrink-swell	0.01
49:							
Udorthents	85	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
50:							
Urban land	50	Not rated		Not rated		Not rated	
Udorthents	40	Not rated		Not rated		Not rated	
51E:							
Watahala	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
51E:							
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
52D:							
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Berks	34	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Rough	10	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
52E, 52F:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Berks	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Rough	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
53F:							
Weikert	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Rough	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
54F:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
55C:							
Wharton	55	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	0.63	Shrink-swell	0.50
		Depth to saturated zone	0.07	Shrink-swell	0.50	Depth to saturated zone	0.07
Blairton	40	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.81	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Depth to hard bedrock	1.00	Depth to saturated zone	0.81
		Depth to hard bedrock	0.01	Slope	0.63	Depth to hard bedrock	0.01
55D:							
Wharton	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.07	Shrink-swell	0.50	Depth to saturated zone	0.07
Blairton	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
		Depth to hard bedrock	0.01	Depth to hard bedrock	1.00	Depth to hard bedrock	0.01
56A:							
Wolfgap	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
57A:							
Wolfgap	95	Not limited		Not limited		Not limited	
58B:							
Zoar	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
59B:							
Zoar	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Urban land	40	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1A:							
Alonzville------	80	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40				
		Low strength	0.22				
2A:							
Alonzville------	80	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Low strength	0.22				
3C:							
Alticrest-------	50	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard	1.00	Droughty	0.71
		Frost action	0.50	bedrock		Slope	0.63
		Depth to hard	0.46	Slope	0.63	Depth to bedrock	0.46
		bedrock		Cutbanks cave	0.10		
Dekalb----------	30	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard	1.00	Droughty	1.00
		Frost action	0.50	bedrock	.	Slope	0.63
		Depth to hard	0.46	Slope	0.63	Depth to bedrock	0.46
		bedrock		Cutbanks cave	0.10		
4D, 4E:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Depth to hard	0.71	bedrock		Droughty	0.75
		bedrock		Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10		
5C:							
Berks-----------	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard	0.71	Depth to hard	1.00	Droughty	0.75
		bedrock		bedrock		Depth to bedrock	0.71
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
Weikert---------	30	Very limited		Very limited		Very limited	
		Depth to hard	1.00	Depth to hard	1.00	Depth to bedrock	1.00
		bedrock		bedrock		Droughty	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
6F:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Depth to hard	0.71	bedrock		Droughty	0.75
		bedrock		Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
6F:							
Weikert	15	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
7D:							
Berks	70	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Weikert	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
7E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Weikert	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
8E, 8F, 9D:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.54
		Depth to hard bedrock	0.54	Too clayey	0.88		
10C:							
Caneyville	45	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.54
		Depth to hard bedrock	0.54	Too clayey	0.88	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
Frederick	45	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
10D:							
Caneyville	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.54
		Depth to hard bedrock	0.54	Too clayey	0.88		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
10D:							
Frederick	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
10E:							
Caneyville	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.54
		Depth to hard bedrock	0.54	Slope	1.00		
				Too clayey	0.88		
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
11B:							
Cottonbend	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
11C:							
Cottonbend	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Slope	0.37
		Slope	0.37	Slope	0.37		
12B:							
Cottonbend	50	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
Urban land	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend	50	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Slope	0.37
		Slope	0.37	Slope	0.37		
Urban land	35	Not rated		Not rated		Not rated	
13A:							
Coursey	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Flooding	0.40				
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
14B:							
Coursey	30	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Flooding	0.40				
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
Ogles	30	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.82	Large stones content	1.00
		Large stones content	0.72				
				Large stones content	0.72	Droughty	0.99
		Frost action	0.50			Flooding	0.60
				Flooding	0.60		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
14B:							
Shelocta	30	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
15F:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
16D, 16E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
Alticrest	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.71
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
17D:							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
Lily	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Frost action	0.50	bedrock	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Slope	1.00	Gravel content	0.01
				Cutbanks cave	0.10		
McClung	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
18E:							
Dekalb	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
Lily	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Gravel content	0.01

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
19E:							
Dekalb----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50			Droughty	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to bedrock	0.46
				Cutbanks cave	0.10		
Rock outcrop----	30	Not rated		Not rated		Not rated	
20E:							
Dekalb----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50			Droughty	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to bedrock	0.46
				Cutbanks cave	0.10		
Watahala--------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	1.00
				Too clayey	0.92		
McClung---------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
21A:							
Dunning---------	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
22B:							
Escatawba-------	80	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
22C:							
Escatawba-------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	0.99	Slope	0.63
		Frost action	0.50				
				Slope	0.63		
				Cutbanks cave	0.10		
22D:							
Escatawba-------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
23C:							
Faywood---------	50	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.90
		Depth to hard bedrock	0.90			Droughty	0.74
				Slope	0.63	Slope	0.63
		Slope	0.63	Too clayey	0.50		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
23C:							
Poplimento------	40	Very limited		Somewhat limited		Somewhat limited	
		Shrink-swell	1.00	Slope	0.63	Slope	0.63
		Low strength	1.00	Too clayey	0.12		
		Slope	0.63	Cutbanks cave	0.10		
23D:							
Faywood---------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.90
		Depth to hard bedrock	0.90	Too clayey	0.50	Droughty	0.74
Poplimento------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	0.12		
		Low strength	1.00	Cutbanks cave	0.10		
23E:							
Faywood---------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Low strength	1.00	bedrock	1.00	Depth to bedrock	0.90
		Depth to hard bedrock	0.90	Slope	1.00	Droughty	0.74
				Too clayey	0.50		
Poplimento------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	0.12		
		Low strength	1.00	Cutbanks cave	0.10		
24C:							
Frederick-------	75	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
		Shrink-swell	0.50	Cutbanks cave	0.10		
24D:							
Frederick-------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
25C:							
Frederick-------	50	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Gravel content	0.08
		Shrink-swell	0.50	Cutbanks cave	0.10		
Watahala--------	40	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Cutbanks cave	1.00	Gravel content	1.00
		Frost action	0.50	Too clayey	0.92	Slope	0.63
				Slope	0.63		
25D:							
Frederick-------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	0.08
		Shrink-swell	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
25D:							
Watahala--------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	1.00
				Too clayey	0.92		
26C:							
Gilpin----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Cutbanks cave	0.10		
26D:							
Gilpin----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Cutbanks cave	0.10		
27A:							
Gladehill-------	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
28A:							
Gladehill-------	80	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
29:							
Landfills-------	85	Not rated		Not rated		Not rated	
30C:							
Lehew-----------	50	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Droughty	0.97
						Depth to bedrock	0.71
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
Berks-----------	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Droughty	0.75
						Depth to bedrock	0.71
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
30D:							
Lehew-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71			Droughty	0.97
				Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10		
Berks-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71			Droughty	0.75
				Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
30E:							
Lehew-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.97
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Berks-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
31F:							
Lehew-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.97
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Berks-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Gravel content	0.01
33D:							
Lily------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Gravel content	0.01
34C:							
Lily------------	45	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Gravel content	0.01
McClung---------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
Dekalb----------	20	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Droughty	1.00
		Frost action	0.50	Slope	0.63	Slope	0.63
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
35C:							
Macove	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.32
		Large stones content	0.03	Large stones content	0.03	Large stones content	0.03
36A:							
Massanetta	75	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.19
		Low strength	1.00	Flooding	0.60		
37D:							
McClung	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Watahala	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	1.00
				Too clayey	0.92		
Dekalb	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
38B:							
Murrill	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
38C:							
Murrill	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.63	Slope	0.63
		Slope	0.63	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
38D:							
Murrill	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
39C:							
Murrill	95	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Slope	0.63	Large stones content	1.00
		Slope	0.63	Too clayey	0.12	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
39D:							
Murrill	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.12	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
40B:							
Nicelytown------	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	0.78	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
40C:							
Nicelytown------	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	0.78	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
41A:							
Ogles-----------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.82	Large stones content	1.00
		Large stones content	0.72	Large stones content	0.72	Droughty	0.99
		Frost action	0.50	Flooding	0.60	Flooding	0.60
42B:							
Oriskany--------	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
43C:							
Oriskany--------	75	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
43D:							
Oriskany--------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
43E:							
Oriskany--------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
44E:							
Oriskany--------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
45C:							
Oriskany--------	55	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
Murrill---------	35	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Slope	0.63	Large stones content	1.00
		Slope	0.63	Too clayey	0.12	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
45D:							
Oriskany--------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Murrill---------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.12	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
45E:							
Oriskany--------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.78	Large stones content	0.78	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Murrill---------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.12	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10		
46A:							
Purdy-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Ponding	1.00	Ponding	1.00
		Low strength	1.00	Too clayey	0.88		
47C:							
Shelocta--------	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
Berks-----------	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Droughty	0.75
						Depth to bedrock	0.71
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10		
47D:							
Shelocta--------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
47D:							
Berks-----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
47E:							
Shelocta--------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Berks-----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
48B:							
Sugarhol--------	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
		Shrink-swell	0.01				
48C:							
Sugarhol--------	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.63	Slope	0.63
		Slope	0.63	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	1.00
				Too clayey	0.92		
Frederick-------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	0.08
		Shrink-swell	0.50	Cutbanks cave	0.10		
52D:							
Weikert---------	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
52D:							
Berks	34	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Rough	10	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
52E, 52F:							
Weikert	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Berks	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Droughty	0.75
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.71
Rough	15	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
53F:							
Weikert	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Rough	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
54F:							
Weikert	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
55C:							
Wharton---------	55	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.63
		Low strength	1.00	Slope	0.63	Depth to saturated zone	0.03
		Slope	0.63	Cutbanks cave	0.10		
Blairton--------	40	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Slope	0.63
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.48
		Slope	0.63	Slope	0.63	Depth to bedrock	0.01
55D:							
Wharton---------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Low strength	1.00	Cutbanks cave	0.10		
Blairton--------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	1.00	Slope	1.00	Depth to saturated zone	0.48
		Low strength	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.01
56A:							
Wolfgap---------	95	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
57A:							
Wolfgap---------	95	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
58B:							
Zoar------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
59B:							
Zoar------------	45	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
Urban land------	40	Not rated		Not rated		Not rated	
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
1A:					
Alonzville----------	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
2A:					
Alonzville----------	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
3C:					
Alticrest-----------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
Dekalb--------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
4D, 4E:					
Berks---------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
5C:					
Berks---------------	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
Weikert-------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
6F:					
Berks---------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
6F:					
Weikert	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
7D:					
Berks	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Weikert	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
7E:					
Berks	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Weikert	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
8E, 8F, 9D:					
Caneyville	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
10C:					
Caneyville	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.37		
Frederick	45	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
10D:					
Caneyville	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
10D:					
Frederick-----------	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
10E:					
Caneyville----------	60	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Frederick-----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
11B:					
Cottonbend----------	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
11C:					
Cottonbend----------	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
12B:					
Cottonbend----------	50	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
Urban land----------	35	Not rated		Not rated	
12C:					
Cottonbend----------	50	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
Urban land----------	35	Not rated		Not rated	
13A:					
Coursey-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
				Flooding	0.40
		Flooding	0.40		
14B:					
Coursey-------------	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
		Flooding	0.40		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
14B:					
Ogles----------------	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Large stones content	1.00
Shelocta------------	30	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
15F:					
Dekalb--------------	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
16D, 16E:					
Dekalb--------------	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Alticrest-----------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
17D:					
Dekalb--------------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Lily----------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
McClung-------------	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.98
18E:					
Dekalb--------------	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Lily----------------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
19E:					
Dekalb	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Watahala	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.68	Seepage	1.00
McClung	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.98
21A:					
Dunning	75	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
22B:					
Escatawba	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Slope	0.68
		Slow water movement	1.00	Seepage	0.50
				Depth to saturated zone	0.19
22C:					
Escatawba	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	0.50
		Slope	0.63	Depth to saturated zone	0.19
22D:					
Escatawba	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
		Slow water movement	1.00	Depth to saturated zone	0.19

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
23C:					
Faywood-------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.63		
Poplimento----------	40	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.63		
23D:					
Faywood-------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Poplimento----------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
23E:					
Faywood-------------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Poplimento----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
24C:					
Frederick-----------	75	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
24D:					
Frederick-----------	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
25C:					
Frederick-----------	50	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Watahala------------	40	Somewhat limited		Very limited	
		Slow water movement	0.68	Slope	1.00
				Seepage	1.00
		Slope	0.63		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
25D:					
Frederick-----------	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Watahala------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.68	Seepage	1.00
26C:					
Gilpin--------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
26D:					
Gilpin--------------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
27A:					
Gladehill-----------	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
28A:					
Gladehill-----------	80	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
29:					
Landfills-----------	85	Not rated		Not rated	
30C:					
Lehew---------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks---------------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
30D:					
Lehew---------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
30D:					
Berks	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
30E:					
Lehew	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
Berks	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
31F:					
Lehew	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
Berks	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rock outcrop	10	Not rated		Not rated	
32C:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
33D:					
Lily	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
34C:					
Lily	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
McClung	30	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.98

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
34C:					
Dekalb	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
35C:					
Macove	85	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Slope	0.63	Slope	1.00
		Large stones content	0.03	Large stones content	0.18
36A:					
Massanetta	75	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
37D:					
McClung	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.98
Watahala	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.68	Seepage	1.00
Dekalb	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
38B:					
Murrill	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Slope	0.68
				Seepage	0.50
38C:					
Murrill	85	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
				Seepage	0.50
		Slope	0.63		
38D:					
Murrill	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
39C:					
Murrill-------------	95	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Slope	0.63	Seepage	0.50
39D:					
Murrill-------------	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	0.50
40B:					
Nicelytown----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	0.68
40C:					
Nicelytown----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Slope	0.63		
41A:					
Ogles---------------	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Large stones content	1.00
42B:					
Oriskany------------	85	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Large stones content	0.78	Large stones content	1.00
				Slope	0.68
43C:					
Oriskany------------	75	Very limited		Very limited	
		Seepage	1.00	Slope	1.00
		Large stones content	0.78	Seepage	1.00
		Slope	0.63	Large stones content	1.00
43D:					
Oriskany------------	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.78	Large stones content	1.00
43E:					
Oriskany------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.78	Large stones content	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
44E:					
Oriskany------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.96	Large stones content	1.00
45C:					
Oriskany------------	55	Very limited		Very limited	
		Seepage	1.00	Slope	1.00
		Large stones content	0.78	Seepage	1.00
		Slope	0.63	Large stones content	1.00
Murrill-------------	35	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Slope	0.63	Seepage	0.50
45D:					
Oriskany------------	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.78	Large stones content	1.00
Murrill-------------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	0.50
45E:					
Oriskany------------	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.78	Large stones content	1.00
Murrill-------------	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	0.50
46A:					
Purdy---------------	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00		
47C:					
Shelocta------------	60	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47C:					
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
47D:					
Shelocta	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
47E:					
Shelocta	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Berks	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
48B:					
Sugarhol	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
48C:					
Sugarhol	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
49:					
Udorthents	85	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
50:					
Urban land	50	Not rated		Not rated	
Udorthents	40	Not rated		Not rated	
51E:					
Watahala	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.68	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
51E:					
Frederick-----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
52D:					
Weikert-------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks---------------	34	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rough---------------	10	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00		
52E, 52F:					
Weikert-------------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks---------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rough---------------	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00		
53F:					
Weikert-------------	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rough---------------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
54F:					
Weikert	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rock outcrop	25	Not rated		Not rated	
Rough	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00		
55C:					
Wharton	55	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	0.44
		Slope	0.63		
Blairton	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	0.94
55D:					
Wharton	55	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.44
		Slow water movement	1.00		
Blairton	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.94
56A:					
Wolfgap	95	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.50	Seepage	0.50
57A:					
Wolfgap	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
58B:					
Zoar----------------	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.68
				Seepage	0.50
59B:					
Zoar----------------	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.68
				Seepage	0.50
Urban land----------	40	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Alonzville------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
2A:							
Alonzville------	80	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
3C:							
Alticrest-------	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.50
Dekalb----------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.93
4D, 4E:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
5C:							
Berks-----------	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
Weikert---------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.63	Gravel content	1.00
		Slope	0.63			Slope	0.63
6F:							
Berks-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Weikert---------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
7D:							
Berks-----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D:							
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
7E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
8E, 8F, 9D:							
Caneyville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
10C:							
Caneyville	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
Frederick	45	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
						Slope	0.37
10D:							
Caneyville	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
Frederick	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
10E:							
Caneyville	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
11B:							
Cottonbend	85	Not limited		Not limited		Not limited	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
11C:							
Cottonbend	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
12B:							
Cottonbend	50	Not limited		Not limited		Not limited	
Urban land	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
Urban land	35	Not rated		Not rated		Not rated	
13A:							
Coursey	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Flooding	0.40	Flooding	0.40		
14B:							
Coursey	30	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Flooding	0.40	Flooding	0.40		
Ogles	30	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Gravel content	0.71
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Large stones content	0.57
		Seepage	1.00	Seepage	1.00	Seepage	0.50
Shelocta	30	Not limited		Not limited		Somewhat limited	
						Gravel content	0.14
15F:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
16D, 16E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Alticrest	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
17D:							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17D:							
Lily	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
McClung	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
18E:							
Dekalb	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Lily	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
19E:							
Dekalb	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
20E:							
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Watahala	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Seepage	1.00	Too clayey	1.00
						Hard to compact	1.00
McClung	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21A:							
Dunning	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				
22B:							
Escatawba	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
		Too clayey	0.50			Depth to saturated zone	0.47

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22C:							
Escatawba	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.86	Slope	0.63	Slope	0.63
		Slope	0.63	Depth to saturated zone	0.19	Too clayey	0.50
		Too clayey	0.50			Depth to saturated zone	0.47
22D:							
Escatawba	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
		Too clayey	0.50			Depth to saturated zone	0.47
23C:							
Faywood	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Hard to compact	1.00
Poplimento	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
23D:							
Faywood	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
Poplimento	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
23E:							
Faywood	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
Poplimento	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
24C:							
Frederick	75	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Hard to compact	1.00
						Slope	0.63
24D:							
Frederick	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25C:							
Frederick	50	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Hard to compact	1.00
						Slope	0.63
Watahala	40	Very limited		Very limited		Very limited	
		Too clayey	1.00	Seepage	1.00	Too clayey	1.00
		Slope	0.63	Slope	0.63	Hard to compact	1.00
						Slope	0.63
25D:							
Frederick	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Watahala	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Seepage	1.00	Too clayey	1.00
						Hard to compact	1.00
26C:							
Gilpin	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
26D:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
27A:							
Gladehill	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Seepage	1.00	Seepage	1.00		
28A:							
Gladehill	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
29:							
Landfills	85	Not rated		Not rated		Not rated	
30C:							
Lehew	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Slope	0.63	Slope	0.63	Seepage	1.00
Berks	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slope	0.63

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30D:							
Lehew-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Berks-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
30E:							
Lehew-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Berks-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
31F:							
Lehew-----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Berks-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.50
33D:							
Lily------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
34C:							
Lily------------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.50
McClung---------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
Dekalb----------	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.93

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35C:							
Macove----------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Gravel content	0.55
		Too clayey	0.50			Seepage	0.50
36A:							
Massanetta------	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
37D:							
McClung---------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Watahala--------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Seepage	1.00	Too clayey	1.00
						Hard to compact	1.00
Dekalb----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
38B:							
Murrill---------	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
38C:							
Murrill---------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
38D:							
Murrill---------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
39C:							
Murrill---------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
39D:							
Murrill---------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
40B:							
Nicelytown------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Too clayey	0.50			Too clayey	0.50

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
40C:							
Nicelytown------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
41A:							
Ogles-----------	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Gravel content	0.71
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Large stones content	0.57
		Seepage	1.00	Seepage	1.00	Seepage	0.50
42B:							
Oriskany--------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86			Seepage	0.50
43C:							
Oriskany--------	75	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86	Slope	0.63	Slope	0.63
		Slope	0.63			Seepage	0.50
43D:							
Oriskany--------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86			Seepage	0.50
43E:							
Oriskany--------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86			Seepage	0.50
44E:							
Oriskany--------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Large stones content	0.96
		Large stones content	0.96			Seepage	0.50
45C:							
Oriskany--------	55	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86	Slope	0.63	Slope	0.63
		Slope	0.63			Seepage	0.50
Murrill---------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
45D:							
Oriskany	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86			Seepage	0.50
Murrill	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
45E:							
Oriskany	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Large stones content	0.86
		Large stones content	0.86			Seepage	0.50
Murrill	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
46A:							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Ponding	1.00	Too clayey	1.00
		Ponding	1.00			Hard to compact	1.00
47C:							
Shelocta	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.14
Berks	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
47D:							
Shelocta	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.14
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
47E:							
Shelocta	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.14
Berks	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48B:							
Sugarhol	85	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
48C:							
Sugarhol	85	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Slope	0.63
49:							
Udorthents	85	Not rated		Very limited		Not rated	
				Slope	1.00		
Rock outcrop	15	Not rated		Not rated		Not rated	
50:							
Urban land	50	Not rated		Not rated		Not rated	
Udorthents	40	Not rated		Somewhat limited		Not rated	
				Slope	0.04		
51E:							
Watahala	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Seepage	1.00	Too clayey	1.00
						Hard to compact	1.00
Frederick	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
52D:							
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
Berks	34	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
Rough	10	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
52E, 52F:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
Berks	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52E, 52F:							
Rough-----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
53F:							
Weikert---------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
Rough-----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
54F:							
Weikert---------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
Rock outcrop----	25	Not rated		Not rated		Not rated	
Rough-----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
55C:							
Wharton---------	55	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Slope	0.63	Depth to saturated zone	0.68
		Depth to saturated zone	0.95	Depth to saturated zone	0.44	Slope	0.63
		Slope	0.63			Too clayey	0.50
Blairton--------	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
		Slope	0.63	Slope	0.63	Slope	0.63
55D:							
Wharton---------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to saturated zone	0.44	Depth to saturated zone	0.68
		Depth to saturated zone	0.95			Too clayey	0.50
Blairton--------	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
56A:							
Wolfgap---------	95	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57A:							
Wolfgap----------	95	Not limited		Not limited		Not limited	
58B:							
Zoar-------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Too clayey	0.50			Too clayey	0.50
59B:							
Zoar-------------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Too clayey	0.50			Too clayey	0.50
Urban land-------	40	Not rated		Not rated		Not rated	
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1A, 2A:					
Alonzville	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3C:					
Alticrest	50	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
Dekalb	30	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
4D, 4E:					
Berks	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
5C:					
Berks	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Weikert	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
6F:					
Berks	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Weikert	15	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
7D:					
Berks	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Weikert	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
7E:					
Berks	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
7E:					
Weikert-------------	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
8E, 8F, 9D:					
Caneyville----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
10C, 10D:					
Caneyville----------	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Frederick-----------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
10E:					
Caneyville----------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Frederick-----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
11B, 11C:					
Cottonbend----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12B, 12C:					
Cottonbend----------	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Urban land----------	35	Not rated		Not rated	
13A:					
Coursey-------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
14B:					
Coursey-------------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ogles---------------	30	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.03	Thickest layer	0.03
Shelocta------------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
15F:					
Dekalb	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
16D, 16E:					
Dekalb	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
Alticrest	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
17D:					
Dekalb	40	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
Lily	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McClung	15	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
18E:					
Dekalb	65	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
Lily	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
19E:					
Dekalb	60	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
Rock outcrop	30	Not rated		Not rated	
20E:					
Dekalb	35	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
Watahala	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
McClung	20	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
21A:					
Dunning	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
22B, 22C:					
Escatawba-----------	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
22D:					
Escatawba-----------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
23C, 23D:					
Faywood-------------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Poplimento----------	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
23E:					
Faywood-------------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Poplimento----------	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
24C, 24D:					
Frederick-----------	75	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
25C, 25D:					
Frederick-----------	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Watahala------------	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
26C, 26D:					
Gilpin--------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
27A, 28A:					
Gladehill-----------	80	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.02
29:					
Landfills-----------	85	Not rated		Not rated	
30C, 30D:					
Lehew---------------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
30C, 30D:					
Berks	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
30E:					
Lehew	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
31F:					
Lehew	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	10	Not rated		Not rated	
32C:					
Lily	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
33D:					
Lily	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
34C:					
Lily	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McClung	30	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
Dekalb	20	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
35C:					
Macove	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
36A:					
Massanetta	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
37D:					
McClung-------------	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
Watahala------------	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Dekalb--------------	20	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
38B, 38C, 38D:					
Murrill-------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
39C, 39D:					
Murrill-------------	95	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
40B, 40C:					
Nicelytown----------	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
41A:					
Ogles---------------	80	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.03	Thickest layer	0.03
42B:					
Oriskany------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
43C, 43D:					
Oriskany------------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
43E:					
Oriskany------------	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
44E:					
Oriskany------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
45C, 45D:					
Oriskany------------	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Murrill-------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
45E:					
Oriskany	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Murrill	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
46A:					
Purdy	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
47C, 47D:					
Shelocta	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
47E:					
Shelocta	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
48B, 48C:					
Sugarhol	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
49:					
Udorthents	85	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
50:					
Urban land	50	Not rated		Not rated	
Udorthents	40	Not rated		Not rated	
51E:					
Watahala	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Frederick	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
52D:					
Weikert	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	34	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Rough	10	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
52E, 52F:					
Weikert	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rough	15	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.00
53F:					
Weikert	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rough	25	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.00
54F:					
Weikert	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
Rough	20	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
55C, 55D:					
Wharton	55	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Blairton	40	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
56A, 57A:					
Wolfgap	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
58B:					
Zoar	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
59B:					
Zoar	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land	40	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 13.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Fair		Fair		Fair	
		Too acid	0.46	Low strength	0.78	Rock fragments	0.68
		Organic matter content low	0.88			Too acid	0.95
3C:							
Alticrest-------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.37
						Depth to bedrock	0.54
		Too acid	0.50				
Dekalb----------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.37
						Too acid	0.50
		Too acid	0.50				
4D, 4E:							
Berks-----------	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
5C:							
Berks-----------	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.29
						Slope	0.37
		Depth to bedrock	0.29				
Weikert---------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Organic matter content low	0.12			Slope	0.37
6F:							
Berks-----------	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Weikert---------	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
7D:							
Berks-----------	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.29			Depth to bedrock	0.29
Weikert---------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
7E:							
Berks-----------	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.29			Depth to bedrock	0.29
Weikert---------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
8E, 8F:							
Caneyville------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Slope	0.00	Too clayey	0.00
		Depth to bedrock	0.46	Low strength	0.00	Depth to bedrock	0.46
9D:							
Caneyville------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.46	Slope	0.00	Depth to bedrock	0.46
10C:							
Caneyville------	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.02	Low strength	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Shrink-swell	0.87	Slope	0.63
Frederick-------	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.63
		Too acid	0.54			Too acid	0.98
10D:							
Caneyville------	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.46	Slope	0.00	Depth to bedrock	0.46

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
10D:							
Frederick-------	45	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
10E:							
Caneyville------	60	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Slope	0.00	Too clayey	0.00
		Depth to bedrock	0.46	Low strength	0.00	Depth to bedrock	0.46
Frederick-------	35	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
11B:							
Cottonbend------	85	Fair		Good		Fair	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.32
		Too acid	0.46			Too acid	0.95
11C:							
Cottonbend------	85	Fair		Good		Fair	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.32
		Too acid	0.46			Slope	0.63
						Too acid	0.95
12B:							
Cottonbend------	50	Fair		Good		Fair	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.32
		Too acid	0.46			Too acid	0.95
Urban land------	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend------	50	Fair		Good		Fair	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.32
		Too acid	0.46			Slope	0.63
						Too acid	0.95
Urban land------	35	Not rated		Not rated		Not rated	
13A:							
Coursey---------	80	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.88			Too acid	0.95

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
14B:							
Coursey----------	30	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.88			Too acid	0.95
Ogles------------	30	Poor		Poor		Poor	
		Droughty	0.00	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.43			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Too acid	0.95
Shelocta---------	30	Fair		Good		Poor	
		Organic matter content low	0.12			Rock fragments	0.00
		Too acid	0.32			Hard to reclaim (rock fragments)	0.84
						Too acid	0.95
15F:							
Dekalb-----------	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.50
16D, 16E:							
Dekalb-----------	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.50
Alticrest--------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.54
17D:							
Dekalb-----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.50
Lily-------------	30	Fair		Poor		Poor	
		Organic matter content low	0.18	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.26	Slope	0.00	Rock fragments	0.24
		Too acid	0.50			Too acid	0.59
McClung----------	15	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50			Too acid	0.76

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
18E:							
Dekalb	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Too acid	0.50
		Too acid	0.50				
Lily	20	Fair		Poor		Poor	
		Organic matter content low	0.18	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.24
		Droughty	0.26			Too acid	0.59
		Too acid	0.50				
19E:							
Dekalb	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Too acid	0.50
		Too acid	0.50				
Rock outcrop	30	Not rated		Not rated		Not rated	
20E:							
Dekalb	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Too acid	0.50
		Too acid	0.50				
Watahala	30	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
McClung	20	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
						Too acid	0.76
		Too acid	0.50				
21A:							
Dunning	75	Fair		Poor		Poor	
		Too clayey	0.08	Wetness depth	0.00	Wetness depth	0.00
				Low strength	0.00	Too clayey	0.08
				Shrink-swell	0.87		
22B:							
Escatawba	80	Fair		Fair		Fair	
		Too acid	0.08	Low strength	0.22	Too acid	0.50
		Organic matter content low	0.12	Wetness depth	0.89	Wetness depth	0.89
		Water erosion	0.90				
22C:							
Escatawba	80	Fair		Fair		Fair	
		Too acid	0.08	Low strength	0.22	Slope	0.37
		Organic matter content low	0.12	Wetness depth	0.89	Too acid	0.50
						Wetness depth	0.89
		Water erosion	0.90				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
22D:							
Escatawba-------	75	Fair		Poor		Poor	
		Too acid	0.08	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.22	Too acid	0.50
		Water erosion	0.90	Wetness depth	0.89	Wetness depth	0.89
23C:							
Faywood---------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Too clayey	0.00	Low strength	0.00	Depth to bedrock	0.10
		Depth to bedrock	0.10	Shrink-swell	0.87	Slope	0.37
Poplimento------	40	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.49	Too clayey	0.00
		Organic matter content low	0.02			Slope	0.37
		Too acid	0.50				
23D:							
Faywood---------	50	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Too clayey	0.00
		Droughty	0.00	Low strength	0.00	Slope	0.00
		Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
Poplimento------	40	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.02	Shrink-swell	0.49	Too clayey	0.00
		Too acid	0.50				
23E:							
Faywood---------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.10	Slope	0.00	Depth to bedrock	0.10
Poplimento------	35	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.02	Shrink-swell	0.49	Too clayey	0.00
		Too acid	0.50				
24C:							
Frederick-------	75	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.37
						Too acid	0.98
		Too acid	0.54				
24D:							
Frederick-------	75	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Slope	0.50	Slope	0.00
				Shrink-swell	0.87	Too acid	0.98
		Too acid	0.54				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
25C:							
Frederick-------	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.37
		Too acid	0.54			Too acid	0.98
Watahala--------	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
						Too acid	0.76
25D:							
Frederick-------	50	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
Watahala--------	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Low strength	0.00	Rock fragments	0.00
						Too acid	0.76
26C:							
Gilpin----------	80	Fair		Poor		Poor	
		Organic matter content low	0.02	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Droughty	0.63			Depth to bedrock	0.71
26D:							
Gilpin----------	85	Fair		Poor		Poor	
		Organic matter content low	0.02	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Droughty	0.63			Depth to bedrock	0.71
27A, 28A:							
Gladehill-------	80	Fair		Good		Fair	
		Too sandy	0.98			Too sandy	0.98
29:							
Landfills-------	85	Not rated		Not rated		Not rated	
30C:							
Lehew-----------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.29
		Depth to bedrock	0.29			Slope	0.37
Berks-----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.29
		Depth to bedrock	0.29			Slope	0.37

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
30D:							
Lehew-----------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Berks-----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
30E:							
Lehew-----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Berks-----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
31F:							
Lehew-----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Berks-----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Fair		Poor		Fair	
		Organic matter content low	0.18	Depth to bedrock	0.00	Rock fragments	0.24
						Slope	0.37
		Droughty	0.26			Too acid	0.59
		Too acid	0.50				
33D:							
Lily------------	80	Fair		Poor		Poor	
		Organic matter content low	0.18	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.24
		Droughty	0.26			Too acid	0.59
		Too acid	0.50				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
34C:							
Lily------------	45	Fair		Poor		Fair	
		Organic matter content low	0.18	Depth to bedrock	0.00	Rock fragments	0.24
						Slope	0.37
		Droughty	0.26			Too acid	0.59
		Too acid	0.50				
McClung---------	30	Fair		Good		Fair	
		Organic matter content low	0.12			Slope	0.37
						Too acid	0.76
		Too acid	0.50				
Dekalb----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.37
						Too acid	0.50
		Too acid	0.50				
35C:							
Macove----------	85	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Slope	0.37
36A:							
Massanetta------	75	Good		Poor		Fair	
				Low strength	0.00	Wetness depth	0.53
				Wetness depth	0.53		
37D:							
McClung---------	45	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
						Too acid	0.76
		Too acid	0.50				
Watahala--------	25	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
Dekalb----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Too acid	0.50
		Too acid	0.50				
38B:							
Murrill---------	85	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.12
						Too clayey	0.53
		Too acid	0.20			Too acid	0.76
		Too clayey	0.92				
38C:							
Murrill---------	85	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.12
						Slope	0.37
		Too acid	0.20			Too clayey	0.53
		Too clayey	0.92				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
38D:							
Murrill---------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
		Too acid	0.20	Slope	0.50	Rock fragments	0.12
		Too clayey	0.92			Too clayey	0.53
39C:							
Murrill---------	95	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.12
		Too acid	0.20			Slope	0.37
		Too clayey	0.92			Too clayey	0.53
39D:							
Murrill---------	95	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.20	Low strength	0.00	Rock fragments	0.12
		Too clayey	0.92			Too clayey	0.53
40B:							
Nicelytown------	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.14
		Too acid	0.50	Wetness depth	0.14	Too acid	0.95
		Water erosion	0.68				
40C:							
Nicelytown------	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.14
		Too acid	0.50	Wetness depth	0.14	Slope	0.37
		Water erosion	0.68			Too acid	0.95
41A:							
Ogles-----------	80	Poor		Poor		Poor	
		Droughty	0.00	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.43			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Too acid	0.95
42B:							
Oriskany--------	85	Fair		Poor		Poor	
		Organic matter content low	0.08	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Too acid	0.88
43C:							
Oriskany--------	75	Fair		Poor		Poor	
		Organic matter content low	0.08	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Slope	0.37

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
43D:							
Oriskany--------	75	Fair		Poor		Poor	
		Organic matter content low	0.08	Cobble content	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50				
43E:							
Oriskany--------	80	Fair		Poor		Poor	
		Organic matter content low	0.08	Slope	0.00	Slope	0.00
				Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50				
44E:							
Oriskany--------	85	Fair		Poor		Poor	
		Organic matter content low	0.08	Slope	0.00	Slope	0.00
				Cobble content	0.00	Rock fragments	0.00
		Too acid	0.50	Stone content	0.20	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.55				
45C:							
Oriskany--------	55	Fair		Poor		Poor	
		Organic matter content low	0.08	Cobble content	0.00	Rock fragments	0.00
				Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.48				
		Too acid	0.50			Slope	0.37
Murrill---------	35	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.12
						Slope	0.37
		Too acid	0.20			Too clayey	0.53
		Too clayey	0.92				
45D:							
Oriskany--------	55	Fair		Poor		Poor	
		Organic matter content low	0.08	Cobble content	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50				
Murrill---------	35	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Rock fragments	0.12
		Too acid	0.20			Too clayey	0.53
		Too clayey	0.92				
45E:							
Oriskany--------	65	Fair		Poor		Poor	
		Organic matter content low	0.08	Slope	0.00	Slope	0.00
				Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.48	Stone content	0.99	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50				
Murrill---------	25	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Rock fragments	0.12
		Too acid	0.20			Too clayey	0.53
		Too clayey	0.92				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
46A:							
Purdy----------	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.87	Too acid	0.95
		Too acid	0.50				
47C:							
Shelocta--------	60	Fair		Good		Poor	
		Organic matter content low	0.12			Rock fragments	0.00
						Slope	0.37
		Too acid	0.32			Hard to reclaim (rock fragments)	0.84
Berks-----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.29
						Slope	0.37
		Depth to bedrock	0.29				
47D:							
Shelocta--------	60	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.00
		Too acid	0.32			Hard to reclaim (rock fragments)	0.84
Berks-----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
47E:							
Shelocta--------	70	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.00
		Too acid	0.32			Hard to reclaim (rock fragments)	0.84
Berks-----------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
48B:							
Sugarhol--------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.76
		Too acid	0.50				
48C:							
Sugarhol--------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.37
						Too acid	0.76
		Too acid	0.50				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
49:							
Udorthents	85	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
50:							
Urban land	50	Not rated		Not rated		Not rated	
Udorthents	40	Not rated		Not rated		Not rated	
51E:							
Watahala	45	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
Frederick	35	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.87	Too acid	0.98
		Too acid	0.54				
52D:							
Weikert	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
Berks	34	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Rough	10	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
52E, 52F:							
Weikert	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
Berks	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.29
		Depth to bedrock	0.29				
Rough	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
53F:							
Weikert	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
Rough	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
54F:							
Weikert	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Rough	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
55C:							
Wharton	55	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Slope	0.37
				Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.20	Shrink-swell	0.87	Too acid	0.76
		Water erosion	0.68				
Blairton	40	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Wetness depth	0.29
				Low strength	0.00	Slope	0.37
		Too acid	0.50	Wetness depth	0.29	Too acid	0.76
		Water erosion	0.90				
55D:							
Wharton	55	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Wetness depth	0.76
		Too acid	0.20	Wetness depth	0.76	Too acid	0.76
		Water erosion	0.68				
Blairton	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Wetness depth	0.29
		Too acid	0.50	Low strength	0.00	Too acid	0.76
		Water erosion	0.90				
56A, 57A:							
Wolfgap	95	Fair		Good		Good	
		Water erosion	0.99				
		Too acid	0.99				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
58B:							
Zoar------------	85	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.05
		Organic matter content low	0.12	Wetness depth	0.14	Wetness depth	0.14
				Shrink-swell	0.92	Too acid	0.88
		Too acid	0.32				
59B:							
Zoar------------	45	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.05
		Organic matter content low	0.12	Wetness depth	0.14	Wetness depth	0.14
				Shrink-swell	0.92	Too acid	0.88
		Too acid	0.32				
Urban land------	40	Not rated		Not rated		Not rated	
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 14.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A, 2A:							
Alonzville------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.93	Depth to water	1.00
3C:							
Alticrest-------	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.04		
		Slope	0.01				
Dekalb----------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.03		
		Slope	0.01				
4D:							
Berks-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				
4E:							
Berks-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
5C:							
Berks-----------	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.01				
Weikert---------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70				
		Slope	0.01				
6F:							
Berks-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.93				
Weikert---------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
		Seepage	0.70				
7D:							
Berks-----------	70	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
7D:							
Weikert----------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70				
		Slope	0.28				
7E:							
Berks------------	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
Weikert----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.97				
		Seepage	0.70				
8E:							
Caneyville-------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.88	Depth to water	1.00
		Depth to bedrock	0.88	Hard to pack	0.18		
8F:							
Caneyville-------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.88	Depth to water	1.00
		Depth to bedrock	0.88	Hard to pack	0.18		
9D:							
Caneyville-------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.88	Thin layer	0.88	Depth to water	1.00
		Slope	0.28	Hard to pack	0.18		
10C:							
Caneyville-------	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.88	Thin layer	0.88	Depth to water	1.00
		Slope	0.01	Hard to pack	0.18		
Frederick--------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.01				
10D:							
Caneyville-------	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.88	Thin layer	0.88	Depth to water	1.00
		Slope	0.28	Hard to pack	0.18		
Frederick--------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.28				
10E:							
Caneyville-------	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.88	Depth to water	1.00
		Depth to bedrock	0.88	Hard to pack	0.18		
Frederick--------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Hard to pack	0.09	Depth to water	1.00
		Seepage	0.70				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11B:							
Cottonbend------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
11C:							
Cottonbend------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.01				
12B:							
Cottonbend------	50	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
Urban land------	35	Not rated		Not rated		Not rated	
12C:							
Cottonbend------	50	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.01				
Urban land------	35	Not rated		Not rated		Not rated	
13A:							
Coursey---------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.99	Slow refill	0.30
				Piping	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
14B:							
Coursey---------	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.99	Slow refill	0.30
				Piping	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
Ogles-----------	30	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Large stones content	0.72	Large stones content	0.72
				Seepage	0.12	Depth to saturated zone	0.54
				Depth to saturated zone	0.09	Cutbanks cave	0.10
Shelocta--------	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
15F:							
Dekalb----------	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	1.00	Seepage	0.03		
		Depth to bedrock	0.86				
16D:							
Dekalb----------	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.03		
		Slope	0.28				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16D:							
Alticrest-------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.04		
		Slope	0.28				
16E:							
Dekalb----------	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Seepage	0.03		
		Depth to bedrock	0.86				
Alticrest-------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Seepage	0.04		
		Depth to bedrock	0.86				
17D:							
Dekalb----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.03		
		Slope	0.28				
Lily------------	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.81	Thin layer	0.81		
		Slope	0.28				
McClung---------	15	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.04	Depth to water	1.00
		Slope	0.28				
18E:							
Dekalb----------	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Seepage	0.03		
		Depth to bedrock	0.86				
Lily------------	20	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.97	Thin layer	0.81		
		Depth to bedrock	0.81				
19E:							
Dekalb----------	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	1.00	Seepage	0.03		
		Depth to bedrock	0.86				
Rock outcrop----	30	Not rated		Not rated		Not rated	
20E:							
Dekalb----------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Seepage	0.03		
		Depth to bedrock	0.86				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
20E:							
Watahala--------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.65	Depth to water	1.00
		Slope	0.97				
McClung---------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Seepage	0.04	Depth to water	1.00
		Seepage	0.70				
21A:							
Dunning---------	75	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.31		
22B:							
Escatawba-------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.90	Depth to water	1.00
				Depth to saturated zone	0.86		
22C:							
Escatawba-------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.90	Depth to water	1.00
		Slope	0.01	Depth to saturated zone	0.86		
22D:							
Escatawba-------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.90	Depth to water	1.00
		Slope	0.28	Depth to saturated zone	0.86		
23C:							
Faywood---------	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.98	Thin layer	0.98	Depth to water	1.00
		Seepage	0.02	Hard to pack	0.01		
		Slope	0.01				
Poplimento------	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.03	Piping	0.18	Depth to water	1.00
		Slope	0.01				
23D:							
Faywood---------	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.98	Thin layer	0.98	Depth to water	1.00
		Slope	0.28	Hard to pack	0.01		
		Seepage	0.02				
Poplimento------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.28	Piping	0.18	Depth to water	1.00
		Seepage	0.03				
23E:							
Faywood---------	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.98	Thin layer	0.98	Depth to water	1.00
		Slope	0.97	Hard to pack	0.01		
		Seepage	0.02				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23E:							
Poplimento------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Piping	0.18	Depth to water	1.00
		Seepage	0.03				
24C:							
Frederick-------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.01				
24D:							
Frederick-------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.12				
25C:							
Frederick-------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.01				
Watahala--------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.65	Depth to water	1.00
		Slope	0.01				
25D:							
Frederick-------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.09	Depth to water	1.00
		Slope	0.28				
Watahala--------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.65	Depth to water	1.00
		Slope	0.28				
26C:							
Gilpin----------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.94	Depth to water	1.00
		Depth to bedrock	0.08	Thin layer	0.81		
		Slope	0.01				
26D:							
Gilpin----------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.94	Depth to water	1.00
		Slope	0.12	Thin layer	0.81		
		Depth to bedrock	0.08				
27A, 28A:							
Gladehill-------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.02		
29:							
Landfills-------	85	Not rated		Not rated		Not rated	
30C:							
Lehew-----------	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.01				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30C:							
Berks-----------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.01				
30D:							
Lehew-----------	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				
Berks-----------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				
30E:							
Lehew-----------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
Berks-----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
31F:							
Lehew-----------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.93				
Berks-----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.93				
Rock outcrop----	10	Not rated		Not rated		Not rated	
32C:							
Lily------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.81	Thin layer	0.81		
		Slope	0.01				
33D:							
Lily------------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.81	Thin layer	0.81		
		Slope	0.28				
34C:							
Lily------------	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.81	Thin layer	0.81		
		Slope	0.01				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
34C:							
McClung----------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.04	Depth to water	1.00
		Slope	0.01				
Dekalb-----------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.03		
		Slope	0.01				
35C:							
Macove-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.03	Depth to water	1.00
		Slope	0.01				
36A:							
Massanetta-------	75	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	0.99	Cutbanks cave	1.00
						Slow refill	0.30
				Piping	0.90	Depth to saturated zone	0.01
				Seepage	0.10		
37D:							
McClung----------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.04	Depth to water	1.00
		Slope	0.28				
Watahala---------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.65	Depth to water	1.00
		Slope	0.28				
Dekalb-----------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Seepage	0.03		
		Slope	0.28				
38B:							
Murrill----------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
38C:							
Murrill----------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.01				
38D:							
Murrill----------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.12				
39C:							
Murrill----------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.01				
39D:							
Murrill----------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.28				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
40B:							
Nicelytown------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to	1.00	Slow refill	0.97
				saturated zone		Cutbanks cave	0.10
				Piping	0.89		
40C:							
Nicelytown------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to	1.00	Slow refill	0.97
		Slope	0.01	saturated zone		Cutbanks cave	0.10
				Piping	0.89		
41A:							
Ogles-----------	80	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Large stones	0.72	Large stones	0.72
				content		content	
				Seepage	0.12	Depth to	0.54
				Depth to	0.09	saturated zone	
				saturated zone		Cutbanks cave	0.10
42B:							
Oriskany--------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.78	Depth to water	1.00
				content			
				Seepage	0.04		
43C:							
Oriskany--------	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.78	Depth to water	1.00
		Slope	0.01	content			
				Seepage	0.04		
43D:							
Oriskany--------	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.78	Depth to water	1.00
		Slope	0.28	content			
				Seepage	0.04		
43E:							
Oriskany--------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.78	Depth to water	1.00
		Slope	0.97	content			
				Seepage	0.04		
44E:							
Oriskany--------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.96	Depth to water	1.00
		Slope	0.88	content			
				Seepage	0.04		
45C:							
Oriskany--------	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.78	Depth to water	1.00
		Slope	0.01	content			
				Seepage	0.04		
Murrill---------	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.01				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
45D:							
Oriskany--------	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.78	Depth to water	1.00
		Slope	0.28	Seepage	0.04		
Murrill---------	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.31	Depth to water	1.00
		Slope	0.28				
45E:							
Oriskany--------	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.78	Depth to water	1.00
		Slope	0.97	Seepage	0.04		
Murrill---------	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Piping	0.31	Depth to water	1.00
		Seepage	0.70				
46A:							
Purdy-----------	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.97
				Ponding	1.00	Cutbanks cave	0.10
				Hard to pack	0.03		
47C:							
Shelocta--------	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.01				
Berks-----------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.01				
47D:							
Shelocta--------	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.28				
Berks-----------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				
47E:							
Shelocta--------	70	Somewhat limited		Very limited		Very limited	
		Slope	0.97	Piping	1.00	Depth to water	1.00
		Seepage	0.70				
Berks-----------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
48B:							
Sugarhol--------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.04	Depth to water	1.00

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
48C:							
Sugarhol--------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.04	Depth to water	1.00
		Slope	0.01				
49:							
Udorthents------	85	Not rated		Not rated		Not rated	
Rock outcrop----	15	Not rated		Not rated		Not rated	
50:							
Urban land------	50	Not rated		Not rated		Not rated	
Udorthents------	40	Not rated		Not rated		Not rated	
51E:							
Watahala--------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.65	Depth to water	1.00
		Slope	0.97				
Frederick-------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Hard to pack	0.09	Depth to water	1.00
		Seepage	0.70				
52D:							
Weikert---------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70				
		Slope	0.28				
Berks-----------	34	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Slope	0.28				
Rough-----------	10	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.28	Seepage	0.38		
52E:							
Weikert---------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.97				
		Seepage	0.70				
Berks-----------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.93				
Rough-----------	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.97	Seepage	0.38		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52F:							
Weikert----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
		Seepage	0.70				
Berks------------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.93	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.93				
Rough------------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.38		
53F:							
Weikert----------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
		Seepage	0.70				
Rough------------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.38		
54F:							
Weikert----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
		Seepage	0.70				
Rock outcrop-----	25	Not rated		Not rated		Not rated	
Rough------------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.38		
55C:							
Wharton----------	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.02	Depth to saturated zone	0.95	Depth to water	1.00
		Slope	0.01				
				Piping	0.87		
Blairton---------	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.56	Depth to saturated zone	1.00	Depth to water	1.00
		Seepage	0.03				
		Slope	0.01	Piping	0.95		
				Thin layer	0.56		
55D:							
Wharton----------	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.28	Depth to saturated zone	0.95	Depth to water	1.00
		Seepage	0.02				
				Piping	0.87		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
55D:							
Blairton	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.56	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.28	Piping	0.95		
		Seepage	0.03	Thin layer	0.56		
56A, 57A:							
Wolfgap	95	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
58B:							
Zoar	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.02	Depth to saturated zone	1.00	Slow refill	0.98
				Piping	0.45	Cutbanks cave	0.10
59B:							
Zoar	45	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.02	Depth to saturated zone	1.00	Slow refill	0.98
				Piping	0.45	Cutbanks cave	0.10
							0.10
Urban land	40	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 15.—Engineering Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
1A, 2A:												
Alonzville------	0-5	Loam	CL, CL-ML	A-4	0	0	85-100	80-100	65-95	45-75	21-31	6-11
	5-15	Loam, silt loam, fine sandy loam	CL, ML, CL-ML	A-4, A-2-4	0	0	85-100	80-100	55-100	30-90	16-31	3-11
	15-55	Clay loam, silty clay loam, loam, silt loam	CL, CL-ML	A-6, A-4	0	0	85-100	80-100	65-100	45-95	23-38	7-15
	55-65	Gravelly loam, clay loam, gravelly sandy clay loam	SC, SC-SM, SM, CL, ML, CL-ML	A-4, A-1, A-2-4, A-6	0	0	65-100	55-100	45-100	20-80	16-38	3-15
3C:												
Alticrest-------	0-4	Channery sandy loam	SC-SM, SM	A-2-4, A-1	0	0-10	70-85	60-80	35-55	15-35	14-23	2-7
	4-30	Channery sandy loam, channery fine sandy loam	SC-SM, SM	A-1, A-2-4, A-4	0	0-10	70-85	60-80	35-65	15-45	14-23	2-7
	30-40	Bedrock			---	---	---	---	---	---	---	---
Dekalb----------	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
4D, 4E:												
Berks-----------	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
5C, 6F, 7D, 7E:												
Berks	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---
Weikert	0-4	Channery silt loam	CL, CL-ML, SC-SM, SC	A-4	0	0-5	65-80	50-75	45-75	35-70	16-31	2-11
	4-16	Very channery silt loam, very channery loam	SC, SC-SM, GC, GC-GM	A-2-4, A-4	0	0-15	45-60	30-50	25-50	15-45	16-31	2-11
	16-26	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8E, 8F, 9D:												
Caneyville------	0-10	Silt loam	CL	A-4, A-6	0	0-3	90-100	85-100	75-100	60-90	21-35	4-15
	10-16	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0-3	85-100	80-100	70-100	60-95	44-66	22-39
	16-29	Clay, silty clay	CH	A-7-6	0	0-8	85-100	80-100	75-100	60-95	48-66	25-39
	29-39	Bedrock			---	---	---	---	---	---	---	---
10C, 10D, 10E:												
Caneyville------	0-10	Silt loam	CL	A-4, A-6	0	0-3	90-100	85-100	75-100	60-90	21-35	4-15
	10-16	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0-3	85-100	80-100	70-100	60-95	44-66	22-39
	16-29	Clay, silty clay	CH	A-7-6	0	0-8	85-100	80-100	75-100	60-95	48-66	25-39
	29-39	Bedrock			---	---	---	---	---	---	---	---
Frederick-------	0-3	Silt loam	CL, CL-ML	A-4	0	0-3	85-100	80-100	70-100	60-90	19-31	5-11
	3-8	Silt loam, silty clay loam, loam, gravelly silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-13	60-100	45-100	40-100	30-95	21-43	6-18
	8-20	Silty clay, silty clay loam, clay, gravelly silty clay loam	CL, MH, CH, SC, SM	A-7, A-6	0	0-7	65-100	55-100	50-100	40-95	39-61	16-28
	20-72	Silty clay, clay, gravelly clay	MH, CH, CL, SC, SM	A-7	0	0-7	65-100	55-100	50-100	40-95	43-79	17-38
11B, 11C:												
Cottonbend------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	55-90	16-31	3-11
	8-17	Fine sandy loam, loam, silt loam	SC-SM, SC, SM, CL-ML, CL, ML	A-4	0	0-5	85-100	80-100	55-100	30-90	16-31	3-11
	17-52	Loam, silty clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-5	85-100	80-100	65-100	30-95	23-39	7-16
	52-72	Gravelly loam, clay, very gravelly sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-2-4, A-6, A-7-6	0	0-15	65-100	55-100	45-100	20-95	23-52	7-23

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
12B, 12C:												
Cottonbend	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	55-90	16-31	3-11
	8-17	Fine sandy loam, loam, silt loam	SC-SM, SC, SM, CL-ML, CL, ML	A-4	0	0-5	85-100	80-100	55-100	30-90	16-31	3-11
	17-52	Loam, silty clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-5	85-100	80-100	65-100	30-95	23-39	7-16
	52-72	Gravelly loam, clay, very gravelly sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-2-4, A-6, A-7-6	0	0-15	65-100	55-100	45-100	20-95	23-52	7-23
Urban land.												
13A:												
Coursey	0-5	Silt loam	CL, CL-ML	A-4	0	0-5	80-100	80-100	75-100	55-90	23-31	7-11
	5-12	Loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-4	0	0-5	65-100	55-100	45-95	35-75	21-31	6-11
	12-60	Loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-10	70-100	60-100	50-100	35-80	23-39	7-16
14B:												
Coursey	0-5	Silt loam	CL, CL-ML	A-4	0	0-5	80-100	80-100	75-100	55-90	23-31	7-11
	5-12	Loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-4	0	0-5	65-100	55-100	45-95	35-75	21-31	6-11
	12-60	Loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-10	70-100	60-100	50-100	35-80	23-39	7-16
Ogles	0-5	Very cobbly loam	SC, SC-SM	A-2-4, A-4	0	30-45	60-75	45-65	40-65	30-50	21-31	6-11
	5-28	Extremely cobbly sandy loam, very cobbly loam	SC-SM, SC	A-1, A-2-4	0	30-45	55-75	35-70	25-65	10-50	16-31	3-11
	28-60	Extremely cobbly sandy loam, extremely cobbly loamy sand, very cobbly sandy loam	GW-GC, SC-SM, SC	A-1, A-2-4	0	20-40	40-75	20-65	10-50	5-25	16-25	3-8

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
14B:												
Shelocta	0-2	Silt loam	CL, CL-ML	A-4	0	0-10	85-95	80-95	70-95	55-85	16-30	3-11
	2-7	Channery silt loam, silt loam, channery loam	CL, CL-ML, SC, SC-SM	A-4	0	0-10	65-95	55-90	45-90	35-80	16-30	3-11
	7-60	Channery silt loam, silty clay loam, channery loam	CL, SC	A-4, A-6	0	0-10	65-95	55-90	45-90	35-85	23-39	7-16
	60-65	Channery silt loam, channery silty clay loam, extremely channery loam	SC, CL, GC	A-4, A-2-4, A-6	0	0-10	40-80	25-75	20-75	15-70	23-39	7-16
15F:												
Dekalb	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---
16D, 16E:												
Dekalb	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---
Alticrest	0-4	Channery sandy loam	SC-SM, SM	A-2-4, A-1	0	0-10	70-85	60-80	35-55	15-35	14-23	2-7
	4-30	Channery sandy loam, channery fine sandy loam	SC-SM, SM	A-1, A-2-4, A-4	0	0-10	70-85	60-80	35-65	15-45	14-23	2-7
	30-40	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
17D:												
Dekalb----------	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---
Lily------------	0-3	Sandy loam	SC-SM, SM, SC	A-2-4	0	0-2	80-95	75-90	45-65	25-35	13-25	1-8
	3-17	Loam, gravelly sandy loam, gravelly fine sandy loam	CL, CL-ML, ML, SM, SC, SC-SM	A-4, A-1, A-2-4	0	0	65-90	55-90	30-85	15-70	13-25	1-8
	17-32	Clay loam, sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-2-4	0	0	60-90	50-90	40-90	15-70	23-39	7-16
	32-42	Bedrock			---	---	---	---	---	---	---	---
McClung---------	0-3	Sandy loam, fine sandy loam, loamy fine sand, loamy sand	SM, SC, SC-SM	A-2-4, A-4, A-1	0	0	85-100	75-100	35-85	10-55	12-25	1-8
	3-11	Sandy loam, fine sandy loam, gravelly loam	SC-SM, SC, SM, ML, CL-ML, CL	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-30	1-11
	11-19	Sandy loam, loam, gravelly loam	SC, SC-SM, SM, CL, CL-ML, ML	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-31	1-11
	19-65	Sandy clay loam, sandy clay, gravelly clay loam	SC, CL	A-6, A-2-4, A-4	0	0	65-100	50-100	50-100	20-80	23-43	1-18

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
18E:												
Dekalb	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---
Lily	0-3	Sandy loam	SC-SM, SM, SC	A-2-4	0	0-2	80-95	75-90	45-65	25-35	13-25	1-8
	3-17	Loam, gravelly sandy loam, gravelly fine sandy loam	CL, CL-ML, ML, SM, SC, SC-SM	A-4, A-1, A-2-4	0	0	65-90	55-90	30-85	15-70	13-25	1-8
	17-32	Clay loam, sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-2-4	0	0	60-90	50-90	40-90	15-70	23-39	7-16
	32-42	Bedrock			---	---	---	---	---	---	---	---
19E:												
Dekalb	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
20E:												
Dekalb	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
20E:												
Watahala--------	0-3	Very gravelly sandy loam	SC-SM, SC	A-2-4, A-1	0	0-7	55-60	40-45	25-35	10-20	16-25	3-8
	3-27	Gravelly silt loam, very gravelly loam, gravelly loam, very gravelly silt loam	SC-SM, SC, CL-ML, CL	A-4, A-2-4	0	0-15	60-80	45-75	40-75	30-65	16-30	3-11
	27-37	Gravelly loam, gravelly silt loam, gravelly silty clay loam, gravelly clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0-15	70-80	60-75	50-75	35-70	23-39	7-16
	37-61	Gravelly clay, silty clay, clay	MH, CH, CL, SC, SM	A-7	0	0-10	65-100	55-100	50-100	40-95	45-70	20-33
McClung---------	0-3	Sandy loam, fine sandy loam, loamy fine sand, loamy sand	SM, SC, SC-SM	A-2-4, A-4, A-1	0	0	85-100	75-100	35-85	10-55	12-25	1-8
	3-11	Sandy loam, fine sandy loam, gravelly loam	SC-SM, SC, SM, ML, CL-ML, CL	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-30	1-11
	11-19	Sandy loam, loam, gravelly loam	SC, SC-SM, SM, CL, CL-ML, ML	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-31	1-11
	19-65	Sandy clay loam, sandy clay, gravelly clay loam	SC, CL	A-6, A-2-4, A-4	0	0	65-100	50-100	50-100	20-80	23-43	1-18

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
21A:												
Dunning---------	0-3	Silt loam	CL, CL-ML	A-4	0	0-2	98-100	95-100	85-100	65-90	18-31	4-11
	3-10	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0-2	98-100	95-100	85-100	70-95	18-39	4-16
	10-32	Silty clay loam, clay, silty clay	CL, CH, MH	A-6, A-7	0	0-2	98-100	95-100	85-100	75-95	39-61	16-28
	32-60	Silty clay loam, clay, silty clay, stratified sandy loam to loam to silt loam	CL, CH, CL-ML, MH, SC, SM, SC-SM	A-6, A-7, A-2-4	0	0-2	98-100	95-100	60-100	30-95	16-61	3-28
22B, 22C, 22D:												
Escatawba-------	0-3	Loam	CL, CL-ML, ML	A-4	0	0-10	85-100	80-100	70-95	50-75	16-30	3-11
	3-17	Loam, silt loam, cobbly fine sandy loam	CL, CL-ML, ML, SM, SC, SC-SM	A-4, A-2-4	0	0-15	80-100	75-100	50-100	30-90	14-30	2-11
	17-30	Loam, gravelly silty clay loam, cobbly clay loam, silt loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-15	70-100	60-100	50-100	35-95	23-38	7-15
	30-50	Clay loam, gravelly clay loam, cobbly clay, gravelly silty clay loam	CL, SC	A-6, A-7-6	0-5	0-15	70-85	60-85	55-85	45-80	39-52	16-23
	50-60	Cobbly clay loam, very gravelly silty clay loam, gravelly clay	CL, CH, MH, SC, SM	A-6, A-7	0-5	10-20	60-85	50-80	45-80	35-75	39-66	16-31
23C, 23D, 23E:												
Faywood---------	0-6	Silty clay loam	CL	A-6	0	0-2	80-100	75-100	70-100	65-95	31-43	11-18
	6-24	Clay, silty clay, silty clay loam	MH, CL, CH	A-7	0	0-2	80-100	75-100	70-100	55-95	39-61	16-28
	24-34	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
23C, 23D, 23E:												
Poplimento------	0-5	Silty clay loam	CL	A-6	0	0-5	85-100	80-100	75-100	70-95	31-43	11-18
	5-20	Silty clay, clay, silty clay loam	CL, ML, CH, MH	A-7	0	0-5	85-100	80-100	75-100	60-95	39-61	16-28
	20-35	Silty clay, channery clay, very channery silty clay loam	CL, CH, MH, ML, SM, SC	A-7, A-2-7	0	0-10	50-100	35-100	35-100	30-95	39-61	16-28
	35-60	Silty clay loam, channery silty clay, very channery silty clay loam	CL, SC	A-6, A-7, A-2-6	0	0-15	50-100	35-100	35-100	30-95	31-52	11-23
24C, 24D:												
Frederick-------	0-3	Silt loam	CL, CL-ML	A-4	0	0-3	85-100	80-100	70-100	60-90	19-31	5-11
	3-8	Silt loam, silty clay loam, loam, gravelly silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-13	60-100	45-100	40-100	30-95	21-43	6-18
	8-20	Silty clay, silty clay loam, clay, gravelly silty clay loam	CL, MH, CH, SC, SM	A-7, A-6	0	0-7	65-100	55-100	50-100	40-95	39-61	16-28
	20-72	Silty clay, clay, gravelly clay	MH, CH, CL, SC, SM	A-7	0	0-7	65-100	55-100	50-100	40-95	43-79	17-38

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
25C, 25D:												
Frederick-------	0-3	Gravelly silt loam	SC, SC-SM, CL, CL-ML	A-4	0	0-7	65-80	55-75	50-75	40-65	19-31	5-11
	3-8	Silt loam, silty clay loam, loam, gravelly silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-13	60-100	45-100	40-100	30-95	21-43	6-18
	8-20	Silty clay, silty clay loam, clay, gravelly silty clay loam	CL, MH, CH, SC, SM	A-7, A-6	0	0-7	65-100	55-100	50-100	40-95	39-61	16-28
	20-72	Silty clay, clay, gravelly clay	MH, CH, CL, SC, SM	A-7	0	0-7	65-100	55-100	50-100	40-95	43-79	17-38
Watahala--------	0-3	Very gravelly sandy loam	SC-SM, SC	A-2-4, A-1	0	0-7	55-60	40-45	25-35	10-20	16-25	3-8
	3-27	Gravelly silt loam, very gravelly loam, gravelly loam, very gravelly silt loam	SC-SM, SC, CL-ML, CL	A-4, A-2-4	0	0-15	60-80	45-75	40-75	30-65	16-30	3-11
	27-37	Gravelly loam, gravelly silt loam, gravelly silty clay loam, gravelly clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0-15	70-80	60-75	50-75	35-70	23-39	7-16
	37-61	Gravelly clay, silty clay, clay	MH, CH, CL, SC, SM	A-7	0	0-10	65-100	55-100	50-100	40-95	45-70	20-33

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
26C, 26D:												
Gilpin----------	0-2	Silt loam	CL, CL-ML	A-4	0	0-2	80-95	75-90	70-90	55-80	21-31	6-11
	2-7	Channery silt loam, silt loam, channery loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4	0	0-2	60-95	50-90	45-90	30-80	21-31	6-11
	7-26	Channery silty clay loam, silt loam, channery loam	CL, SC	A-6, A-2-4	0	0-5	60-95	50-90	45-90	30-85	23-39	7-16
	26-32	Very channery silty clay loam, channery silt loam, very channery loam	SC, SC-SM	A-6, A-2-4, A-2-6	0	0-5	50-65	35-50	30-50	20-50	21-39	6-16
	32-42	Bedrock			---	---	---	---	---	---	---	---
27A, 28A:												
Gladehill-------	0-7	Loam	CL-ML, ML	A-4	0	0	85-100	75-100	65-95	45-75	13-23	1-7
	7-14	Fine sandy loam, sandy loam, loam	SC-SM, SM, ML, CL-ML	A-4, A-2-4	0	0	85-100	80-100	45-95	25-75	12-23	1-7
	14-40	Fine sandy loam, sandy loam, loam	SC-SM, SM, ML, CL-ML	A-4, A-2-4	0	0	85-100	80-100	45-95	25-75	12-23	1-7
	40-60	Sandy clay loam, fine sandy loam, gravelly sandy loam, loam	SC, SC-SM, SM, ML, CL, CL-ML	A-4, A-1, A-2-4	0	0	65-100	55-100	30-95	15-75	12-30	1-11
29.												
Landfills												
30C, 30D, 30E:												
Lehew-----------	0-2	Channery sandy loam	SM, SC-SM	A-1, A-2-4	0	5-10	65-80	55-75	30-55	15-30	11-21	NP-6
	2-15	Very channery loam, channery sandy loam	SC-SM, SM	A-2-4, A-1, A-4	0	5-10	60-75	45-65	30-65	15-50	12-23	1-7
	15-27	Very channery loam, extremely channery sandy loam	SC-SM, SM, GM, GC-GM	A-2-4, A-1	0	5-15	40-60	20-50	15-50	5-40	12-23	1-7
	27-37	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
30C, 30D, 30E:												
Berks-----------	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---
31F:												
Lehew-----------	0-2	Channery sandy loam	SM, SC-SM	A-1, A-2-4	0	5-10	65-80	55-75	30-55	15-30	11-21	NP-6
	2-15	Very channery loam, channery sandy loam	SC-SM, SM	A-2-4, A-1, A-4	0	5-10	60-75	45-65	30-65	15-50	12-23	1-7
	15-27	Very channery loam, extremely channery sandy loam	SC-SM, SM, GM, GC-GM	A-2-4, A-1	0	5-15	40-60	20-50	15-50	5-40	12-23	1-7
	27-37	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
31F:												
Berks	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
32C, 33D:												
Lily	0-3	Sandy loam	SC-SM, SM, SC	A-2-4	0	0-2	80-95	75-90	45-65	25-35	13-25	1-8
	3-17	Loam, gravelly sandy loam, gravelly fine sandy loam	CL, CL-ML, ML, SM, SC, SC-SM	A-4, A-1, A-2-4	0	0	65-90	55-90	30-85	15-70	13-25	1-8
	17-32	Clay loam, sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-2-4	0	0	60-90	50-90	40-90	15-70	23-39	7-16
	32-42	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
34C:												
Lily------------	0-3	Sandy loam	SC-SM, SM, SC	A-2-4	0	0-2	80-95	75-90	45-65	25-35	13-25	1-8
	3-17	Loam, gravelly sandy loam, gravelly fine sandy loam	CL, CL-ML, ML, SM, SC, SC-SM	A-4, A-1, A-2-4	0	0	65-90	55-90	30-85	15-70	13-25	1-8
	17-32	Clay loam, sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-6, A-2-4	0	0	60-90	50-90	40-90	15-70	23-39	7-16
	32-42	Bedrock			---	---	---	---	---	---	---	---
McClung---------	0-3	Sandy loam, fine sandy loam, loamy fine sand, loamy sand	SM, SC, SC-SM	A-2-4, A-4, A-1	0	0	85-100	75-100	35-85	10-55	12-25	1-8
	3-11	Sandy loam, fine sandy loam, gravelly loam	SC-SM, SC, SM, ML, CL-ML, CL	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-30	1-11
	11-19	Sandy loam, loam, gravelly loam	SC, SC-SM, SM, CL, CL-ML, ML	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-31	1-11
	19-65	Sandy clay loam, sandy clay, gravelly clay loam	SC, CL	A-6, A-2-4, A-4	0	0	65-100	50-100	50-100	20-80	23-43	1-18
Dekalb----------	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
35C:												
Macove----------	0-1	Channery silt loam	CL, ML, CL-ML, SC, SM, SC-SM	A-4	0-10	0-10	65-80	55-75	50-70	40-65	16-30	3-11
	1-4	Channery loam, very channery silt loam	SC, SM, SC-SM, CL, ML, CL-ML	A-4	0-10	0-15	65-85	55-80	50-80	35-70	16-30	3-11
	4-7	Channery silt loam, very channery loam	SC, SM, SC-SM, CL, ML, CL-ML	A-4, A-2-4, A-1	0-10	0-15	50-85	35-75	30-75	20-65	16-30	3-11
	7-65	Very channery silty clay loam, very bouldery loam, extremely channery silt loam	SC, SM, SC-SM, CL, ML, CL-ML	A-6, A-4, A-2-4	0-30	10-15	55-85	40-80	35-80	25-75	16-39	3-16
36A:												
Massanetta------	0-12	Silt loam, loam	CL	A-6	0	0	90-100	85-100	70-100	50-90	30-36	11-16
	12-39	Loam, silty clay loam, silt loam	CL	A-6	0	0	90-100	85-100	70-100	50-95	30-41	11-20
	39-61	Loam, sandy loam, silt loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-6, A-2-4	0	0	85-100	75-100	45-100	25-95	21-41	4-20
	61-70	Loamy sand, stratified loamy sand to silt loam to clay	SM, SC, SC-SM, ML, CL, CL-ML, CH	A-2-4, A-1, A-6, A-7-6	0	0	85-100	75-100	40-100	10-95	17-57	1-32

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
37D:												
McClung----------	0-3	Sandy loam, fine sandy loam, loamy fine sand, loamy sand	SM, SC, SC-SM	A-2-4, A-4, A-1	0	0	85-100	75-100	35-85	10-55	12-25	1-8
	3-11	Sandy loam, fine sandy loam, gravelly loam	SC-SM, SC, SM, ML, CL-ML, CL	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-30	1-11
	11-19	Sandy loam, loam, gravelly loam	SC, SC-SM, SM, CL, CL-ML, ML	A-2-4, A-4, A-1	0	0	65-100	50-100	30-95	15-75	16-31	1-11
	19-65	Sandy clay loam, sandy clay, gravelly clay loam	SC, CL	A-6, A-2-4, A-4	0	0	65-100	50-100	50-100	20-80	23-43	1-18
Watahala---------	0-3	Very gravelly sandy loam	SC-SM, SC	A-2-4, A-1	0	0-7	55-60	40-45	25-35	10-20	16-25	3-8
	3-27	Gravelly silt loam, very gravelly loam, gravelly loam, very gravelly silt loam	SC-SM, SC, CL-ML, CL	A-4, A-2-4	0	0-15	60-80	45-75	40-75	30-65	16-30	3-11
	27-37	Gravelly loam, gravelly silt loam, gravelly silty clay loam, gravelly clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0-15	70-80	60-75	50-75	35-70	23-39	7-16
	37-61	Gravelly clay, silty clay, clay	MH, CH, CL, SC, SM	A-7	0	0-10	65-100	55-100	50-100	40-95	45-70	20-33
Dekalb-----------	0-2	Channery sandy loam	SC-SM, SM, SC	A-2-4, A-1	0	10-25	70-90	60-85	35-60	20-35	14-25	NP-8
	2-30	Very channery sandy loam, very channery fine sandy loam, very channery loam	SC-SM, SM, SC	A-1, A-2-4, A-4	0	12-25	55-65	35-55	20-55	10-40	14-25	NP-8
	30-40	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
38B, 38C, 38D:												
Murrill---------	0-4	Loam	CL, CL-ML	A-4	0	0	80-90	75-85	65-80	45-60	16-25	3-8
	4-10	Channery silt loam, channery sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-1	0	0-7	75-85	65-85	40-85	20-75	16-30	3-11
	10-40	Channery silty clay loam, silty clay loam, channery silt loam, channery clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0-7	75-85	65-85	55-85	40-80	23-39	7-16
	40-65	Silty clay, silty clay loam, channery clay loam	CL	A-7, A-6	0	0-7	80-100	70-100	65-100	50-95	31-57	11-26
39C, 39D:												
Murrill---------	0-4	Cobbly loam	CL, CL-ML	A-4	0	25-40	90-100	90-100	75-95	50-75	16-25	3-8
	4-10	Channery silt loam, channery sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-1	0	0-7	75-85	65-85	40-85	20-75	16-30	3-11
	10-40	Channery silty clay loam, silty clay loam, channery silt loam, channery clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0-7	75-85	65-85	55-85	40-80	23-39	7-16
	40-65	Silty clay, silty clay loam, channery clay loam	CL	A-7, A-6	0	0-7	80-100	70-100	65-100	50-95	31-57	11-26

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
40B, 40C:												
Nicelytown------	0-5	Silt loam	CL, CL-ML	A-4	0	0-10	85-100	80-100	75-100	60-90	13-31	1-11
	5-8	Silt loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-4	0	0-10	85-100	80-100	60-100	35-90	13-31	1-11
	8-34	Clay loam, silty clay loam, gravelly silt loam	CL, SC	A-6, A-4	0	0-15	70-100	60-100	50-100	35-95	23-39	7-16
	34-65	Silty clay loam, gravelly silty clay loam, very gravelly loam	CL, SC	A-6, A-2-4	0	0-15	60-100	45-100	40-100	25-95	23-39	7-16
41A:												
Ogles-----------	0-5	Very cobbly loam	SC, SC-SM	A-2-4, A-4	0	30-45	60-75	45-65	40-65	30-50	21-31	6-11
	5-28	Extremely cobbly sandy loam, very cobbly loam	SC-SM, SC	A-1, A-2-4	0	30-45	55-75	35-70	25-65	10-50	16-31	3-11
	28-60	Extremely cobbly sandy loam, extremely cobbly loamy sand, very cobbly sandy loam	GW-GC, SC-SM, SC	A-1, A-2-4	0	20-40	40-75	20-65	10-50	5-25	16-25	3-8

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
42B, 43C, 43D, 43E:												
Oriskany-------	0-6	Cobbly sandy loam	SC-SM	A-2-4	0-10	20-30	85-95	75-90	45-65	20-35	12-21	1-6
	6-11	Cobbly sandy loam, stony sandy loam, extremely cobbly loam	SC-SM, SC, CL-ML, CL	A-2-4, A-4, A-1	0-15	20-35	55-90	40-90	25-85	10-65	12-30	1-11
	11-65	Very cobbly loam, extremely cobbly loam, very stony clay loam, extremely cobbly sandy clay loam	SC, SC-SM	A-4, A-6, A-2-6, A-2-4	5-20	20-40	50-75	30-70	25-65	10-55	21-39	6-16
44E:												
Oriskany--------	0-6	Extremely bouldery sandy loam	SC-SM	A-1, A-2-4	50-55	10-15	70-80	60-70	40-45	20-25	12-21	1-6
	6-11	Cobbly sandy loam, stony sandy loam, extremely cobbly loam	SC-SM, SC, CL-ML, CL	A-2-4, A-4, A-1	0-15	20-35	55-90	40-90	25-85	10-65	12-30	1-11
	11-65	Very cobbly loam, extremely cobbly loam, very stony clay loam, extremely cobbly sandy clay loam	SC, SC-SM	A-4, A-6, A-2-6, A-2-4	5-20	20-40	50-75	30-70	25-65	10-55	21-39	6-16

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
45C, 45D, 45E:												
Oriskany	0-6	Cobbly sandy loam	SC-SM	A-2-4	0-10	20-30	85-95	75-90	45-65	20-35	12-21	1-6
	6-11	Cobbly sandy loam, stony sandy loam, extremely cobbly loam	SC-SM, SC, CL-ML, CL	A-2-4, A-4, A-1	0-15	20-35	55-90	40-90	25-85	10-65	12-30	1-11
	11-65	Very cobbly loam, extremely cobbly loam, very stony clay loam, extremely cobbly sandy clay loam	SC, SC-SM	A-4, A-6, A-2-6, A-2-4	5-20	20-40	50-75	30-70	25-65	10-55	21-39	6-16
Murrill	0-4	Cobbly loam	CL, CL-ML	A-4	0	25-40	90-100	90-100	75-95	50-75	16-25	3-8
	4-10	Channery silt loam, channery sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-1	0	0-7	75-85	65-85	40-85	20-75	16-30	3-11
	10-40	Channery silty clay loam, silty clay loam, channery silt loam, channery clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0-7	75-85	65-85	55-85	40-80	23-39	7-16
	40-65	Silty clay, silty clay loam, channery clay loam	CL	A-7, A-6	0	0-7	80-100	70-100	65-100	50-95	31-57	11-26
46A:												
Purdy	0-8	Silty clay loam	CL	A-6	0	0	95-100	90-100	90-100	75-95	31-43	11-18
	8-13	Silty clay loam, silt loam, clay loam	CL	A-6, A-4	0	0	95-100	90-100	90-100	65-95	25-43	8-18
	13-31	Silty clay, clay, silty clay loam	CH, MH, CL	A-7	0	0	95-100	90-100	90-100	70-95	39-57	16-26
	31-60	Clay, silty clay, clay loam	MH, CH, CL	A-7	0	0-3	95-100	95-100	85-100	65-95	39-57	16-26

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
47C, 47D, 47E:												
Shelocta--------	0-2	Silt loam	CL, CL-ML	A-4	0	0-10	85-95	80-95	70-95	55-85	16-30	3-11
	2-7	Channery silt loam, silt loam, channery loam	CL, CL-ML, SC, SC-SM	A-4	0	0-10	65-95	55-90	45-90	35-80	16-30	3-11
	7-60	Channery silt loam, silty clay loam, channery loam	CL, SC	A-4, A-6	0	0-10	65-95	55-90	45-90	35-85	23-39	7-16
	60-65	Channery silt loam, channery silty clay loam, extremely channery loam	SC, CL, GC	A-4, A-2-4, A-6	0	0-10	40-80	25-75	20-75	15-70	23-39	7-16
Berks-----------	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
48B, 48C:												
Sugarhol--------	0-2	Silt loam	CL-ML, CL	A-4	0	0-10	85-100	80-100	75-100	55-90	21-31	6-11
	2-11	Silt loam, loam, clay loam	CL-ML, CL	A-4	0	0-10	85-100	80-100	70-100	50-90	21-34	6-13
	11-61	Silty clay, clay, gravelly clay loam	CL, CH, SC	A-6, A-7	0	0-15	70-100	60-100	55-100	45-95	39-70	16-33
49. Udorthents-Rock outcrop												
50. Urban land-Udorthents												
51E:												
Watahala--------	0-3	Very gravelly sandy loam	SC-SM, SC	A-2-4, A-1	0	0-7	55-60	40-45	25-35	10-20	16-25	3-8
	3-27	Gravelly silt loam, very gravelly loam, gravelly loam, very gravelly silt loam	SC-SM, SC, CL-ML, CL	A-4, A-2-4	0	0-15	60-80	45-75	40-75	30-65	16-30	3-11
	27-37	Gravelly loam, gravelly silt loam, gravelly silty clay loam, gravelly clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0-15	70-80	60-75	50-75	35-70	23-39	7-16
	37-61	Gravelly clay, silty clay, clay	MH, CH, CL, SC, SM	A-7	0	0-10	65-100	55-100	50-100	40-95	45-70	20-33

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
51E:												
Frederick-------	0-3	Gravelly silt loam	SC, SC-SM, CL, CL-ML	A-4	0	0-7	65-80	55-75	50-75	40-65	19-31	5-11
	3-8	Silt loam, silty clay loam, loam, gravelly silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-6	0	0-13	60-100	45-100	40-100	30-95	21-43	6-18
	8-20	Silty clay, silty clay loam, clay, gravelly silty clay loam	CL, MH, CH, SC, SM	A-7, A-6	0	0-7	65-100	55-100	50-100	40-95	39-61	16-28
	20-72	Silty clay, clay, gravelly clay	MH, CH, CL, SC, SM	A-7	0	0-7	65-100	55-100	50-100	40-95	43-79	17-38
52D, 52E, 52F:												
Weikert---------	0-4	Channery silt loam	CL, CL-ML, SC-SM, SC	A-4	0	0-5	65-80	50-75	45-75	35-70	16-31	2-11
	4-16	Very channery silt loam, very channery loam	SC, SC-SM, GC, GC-GM	A-2-4, A-4	0	0-15	45-60	30-50	25-50	15-45	16-31	2-11
	16-26	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
52D, 52E, 52F:												
Berks	0-4	Channery silt loam	SC-SM, SC, SM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-75	50-75	40-70	16-30	2-10
	4-11	Channery silt loam, very channery silt loam, channery silty clay loam, extremely channery loam	SC, SC-SM, CL, CL-ML, GC-GM, GC	A-4, A-1, A-2-4, A-6	0	0-15	40-85	20-75	15-75	10-75	16-35	2-14
	11-22	Very channery silt loam, extremely channery silt loam, very channery silty clay loam, extremely channery loam	SC, SC-SM, GC-GM, GC	A-2-4, A-1, A-4, A-6	0	0-15	40-65	20-50	15-50	10-50	16-35	2-14
	22-27	Very channery loam, very channery silt loam, extremely channery loam, extremely channery silt loam	SC, SM, SC-SM, GC-GM, GC, GM, GP-GC, GP-GM	A-2-4, A-1, A-4	0	0-20	30-65	10-50	5-50	5-45	16-30	2-10
	27-37	Bedrock			---	---	---	---	---	---	---	---
Rough	0-1	Very channery silt loam	GC-GM, GM, GC	A-1, A-4, A-2-4	0	0-10	45-60	30-50	25-50	20-45	16-30	3-11
	1-5	Extremely channery silt loam, very channery loam	GC-GM, GC, GM, GW-GM, SM, SC, SC-SM	A-2-4, A-4, A-1	0	0-10	35-60	15-50	10-50	10-45	16-30	3-11
	5-7	Extremely channery silt loam, very channery loam	GW-GC, GM, GC, GC-GM	A-2-4, A-1	0	5-20	35-55	10-40	10-40	5-35	16-30	3-11
	7-17	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
53F:												
Weikert---------	0-4	Channery silt loam	CL, CL-ML, SC-SM, SC	A-4	0	0-5	65-80	50-75	45-75	35-70	16-31	2-11
	4-16	Very channery silt loam, very channery loam	SC, SC-SM, GC, GC-GM	A-2-4, A-4	0	0-15	45-60	30-50	25-50	15-45	16-31	2-11
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rough-----------	0-1	Very channery silt loam	GC-GM, GM, GC	A-1, A-4, A-2-4	0	0-10	45-60	30-50	25-50	20-45	16-30	3-11
	1-5	Extremely channery silt loam, very channery loam	GC-GM, GC, GM, GW-GM, SM, SC, SC-SM	A-2-4, A-4, A-1	0	0-10	35-60	15-50	10-50	10-45	16-30	3-11
	5-7	Extremely channery silt loam, very channery loam	GW-GC, GM, GC, GC-GM	A-2-4, A-1	0	5-20	35-55	10-40	10-40	5-35	16-30	3-11
	7-17	Bedrock			---	---	---	---	---	---	---	---
54F:												
Weikert---------	0-4	Channery silt loam	CL, CL-ML, SC-SM, SC	A-4	0	0-5	65-80	50-75	45-75	35-70	16-31	2-11
	4-16	Very channery silt loam, very channery loam	SC, SC-SM, GC, GC-GM	A-2-4, A-4	0	0-15	45-60	30-50	25-50	15-45	16-31	2-11
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
Rough-----------	0-1	Very channery silt loam	GC-GM, GM, GC	A-1, A-4, A-2-4	0	0-10	45-60	30-50	25-50	20-45	16-30	3-11
	1-5	Extremely channery silt loam, very channery loam	GC-GM, GC, GM, GW-GM, SM, SC, SC-SM	A-2-4, A-4, A-1	0	0-10	35-60	15-50	10-50	10-45	16-30	3-11
	5-7	Extremely channery silt loam, very channery loam	GW-GC, GM, GC, GC-GM	A-2-4, A-1	0	5-20	35-55	10-40	10-40	5-35	16-30	3-11
	7-17	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
55C, 55D:												
Wharton	0-3	Silt loam	CL, CL-ML	A-4	0	0-5	80-100	75-100	65-100	50-90	16-30	2-11
	3-8	Silt loam, silty clay loam, channery silt loam	CL, CL-ML	A-6, A-4	0	0-5	75-100	70-100	60-100	45-95	21-34	6-13
	8-44	Silty clay loam, channery silty clay, clay	CL	A-6, A-4	0	0-5	80-100	70-100	65-100	55-95	25-52	7-22
	44-62	Silty clay loam, very channery silt loam, channery clay loam	CL, SC	A-6, A-2-4	0	0-10	55-100	40-100	35-100	30-95	25-52	7-22
Blairton	0-9	Silt loam	CL-ML, CL, ML	A-4	0	0	80-100	75-100	70-100	55-90	16-31	3-11
	9-31	Silty clay loam, channery silt loam	CL-ML, CL	A-6, A-4	0	0-5	80-100	75-100	70-100	55-95	23-39	7-16
	31-38	Very channery silt loam, channery silty clay, channery silty clay loam	SC, CL	A-6, A-7-6, A-2-4	0	0-10	55-85	40-80	35-80	30-75	25-52	8-23
	38-48	Bedrock			---	---	---	---	---	---	---	---
56A, 57A:												
Wolfgap	0-18	Loam	CL-ML, CL	A-4	0	0-10	85-100	80-100	70-95	50-75	18-25	4-8
	18-60	Loam, sandy clay loam, clay loam, gravelly silt loam	CL, SC	A-4, A-6, A-2-4	0	0-15	70-100	60-100	50-100	20-90	23-39	7-16

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
58B:												
Zoar------------	0-8	Silt loam	CL, CL-ML	A-4	0	0-2	95-100	95-100	85-100	65-90	21-31	6-11
	8-15	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-2	95-100	95-100	85-100	65-95	21-39	6-16
	15-42	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0-2	95-100	95-100	85-100	70-95	39-52	16-23
	42-60	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0-2	85-100	80-100	70-100	60-95	39-52	16-23
59B:												
Zoar------------	0-8	Silt loam	CL, CL-ML	A-4	0	0-2	95-100	95-100	85-100	65-90	21-31	6-11
	8-15	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-2	95-100	95-100	85-100	65-95	21-39	6-16
	15-42	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0-2	95-100	95-100	85-100	70-95	39-52	16-23
	42-60	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0-2	85-100	80-100	70-100	60-95	39-52	16-23
Urban land.												
W.												
Water												

Table 16.—Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
1A, 1B:														
Alonzville-------	0-5	30-50	30-50	15-27	1.45-1.65	4.00-14.00	0.15-0.19	0.0-2.9	1.0-3.0	.17	.24	5	6	48
	5-15	10-80	10-80	10-27	1.45-1.65	4.00-14.00	0.13-0.22	0.0-2.9	0.5-1.5	.24	.32			
	15-55	10-50	18-70	18-34	1.45-1.70	4.00-14.00	0.10-0.22	0.0-2.9	0.5-1.0	.24	.32			
	55-65	21-78	10-49	10-34	1.45-1.70	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.5	.17	.37			
3C:														
Alticrest--------	0-4	50-80	10-40	8-18	1.40-1.55	14.00-42.00	0.08-0.10	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	4-30	50-80	10-40	8-18	1.40-1.55	14.00-42.00	0.08-0.13	0.0-2.9	0.0-0.5	.17	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
4D, 4E:														
Berks------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
5C, 6F, 7D, 7E:														
Berks------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
Weikert----------	0-4	15-35	50-70	10-25	1.20-1.40	14.00-42.00	0.11-0.17	0.0-2.9	0.5-2.0	.28	.43	1	5	48
	4-16	15-35	40-70	10-25	1.20-1.40	14.00-42.00	0.06-0.11	0.0-2.9	0.0-0.5	.15	.49			
	16-26	---	---	---	---	1.40-42.00	---	---	---	---	---			
8E, 8F, 9D:														
Caneyville-------	0-10	15-40	51-75	10-25	1.20-1.40	4.00-14.00	0.19-0.22	0.0-2.9	0.5-2.5	.43	.43	2	6	48
	10-16	2-30	15-60	36-60	1.35-1.60	0.42-1.40	0.10-0.15	3.0-5.9	0.0-0.5	.37	.37			
	16-29	10-40	15-45	40-60	1.35-1.60	0.42-1.40	0.10-0.14	3.0-5.9	0.0-0.5	.24	.24			
	29-39	---	---	---	---	0.00-4.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
10C, 10D, 10E:														
Caneyville-------	0-10	15-40	51-75	10-25	1.20-1.40	4.00-14.00	0.19-0.22	0.0-2.9	0.5-2.5	.43	.43	2	6	48
	10-16	2-30	15-60	36-60	1.35-1.60	0.42-1.40	0.10-0.15	3.0-5.9	0.0-0.5	.37	.37			
	16-29	10-40	15-45	40-60	1.35-1.60	0.42-1.40	0.10-0.14	3.0-5.9	0.0-0.5	.24	.24			
	29-39	---	---	---	---	0.00-4.00	---	---	---	---	---			
Frederick--------	0-3	15-35	50-70	13-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.28	.37	5	6	48
	3-8	15-45	20-70	15-40	1.25-1.50	14.00-42.00	0.06-0.22	0.0-2.9	0.0-1.0	.32	.43			
	8-20	2-30	20-50	35-60	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.32	.32			
	20-72	0-30	10-50	40-80	1.20-1.50	4.00-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.20	.20			
11B, 11C:														
Cottonbend-------	0-8	10-45	50-70	10-25	1.35-1.50	4.00-14.00	0.17-0.22	0.0-2.9	0.5-3.0	.28	.37	5	6	48
	8-17	10-70	15-70	10-27	1.40-1.55	4.00-14.00	0.13-0.22	0.0-2.9	0.2-1.5	.24	.28			
	17-52	10-70	15-70	18-35	1.40-1.55	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.32	.37			
	52-72	10-70	15-50	15-50	1.40-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.17	.37			
12B, 12C:														
Cottonbend-------	0-8	10-45	50-70	10-25	1.35-1.50	4.00-14.00	0.17-0.22	0.0-2.9	0.5-3.0	.28	.37	5	6	48
	8-17	10-70	15-70	10-27	1.40-1.55	4.00-14.00	0.13-0.22	0.0-2.9	0.2-1.5	.24	.28			
	17-52	10-70	15-70	18-35	1.40-1.55	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.32	.37			
	52-72	10-70	15-50	15-50	1.40-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.17	.37			
Urban land.														
13A:														
Coursey----------	0-5	15-40	50-70	18-27	1.35-1.60	4.00-14.00	0.18-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-12	25-50	30-45	15-27	1.50-1.70	4.00-14.00	0.11-0.19	0.0-2.9	0.5-1.8	.32	.32			
	12-60	25-50	25-45	18-35	1.50-1.70	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.32	.32			
14B:														
Coursey----------	0-5	15-40	50-70	18-27	1.35-1.60	4.00-14.00	0.18-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-12	25-50	30-45	15-27	1.50-1.70	4.00-14.00	0.11-0.19	0.0-2.9	0.5-1.8	.32	.32			
	12-60	25-50	25-45	18-35	1.50-1.70	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.32	.32			
Ogles------------	0-5	25-50	30-45	15-27	1.20-1.40	14.00-42.00	0.09-0.12	0.0-2.9	1.0-4.0	.05	.24	5	6	0
	5-28	30-80	10-45	12-27	1.40-1.60	14.00-42.00	0.05-0.13	0.0-2.9	0.5-2.0	.05	.20			
	28-60	55-85	2-30	10-20	1.50-1.70	14.00-42.00	0.02-0.09	0.0-2.9	0.0-1.0	.05	.20			
Shelocta---------	0-2	20-40	40-65	10-25	1.15-1.30	4.00-14.00	0.18-0.21	0.0-2.9	0.5-3.0	.28	.37	5	6	48
	2-7	15-35	45-65	10-25	1.30-1.55	4.00-14.00	0.11-0.20	0.0-2.9	0.0-0.5	.32	.43			
	7-60	15-35	45-65	18-35	1.30-1.55	4.00-14.00	0.08-0.20	0.0-2.9	0.0-0.5	.28	.43			
	60-65	14-34	40-65	18-35	1.30-1.55	4.00-14.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.43			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
15F:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
16D, 16E:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Alticrest--------	0-4	50-80	10-40	8-18	1.40-1.55	14.00-42.00	0.08-0.10	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	4-30	50-80	10-40	8-18	1.40-1.55	14.00-42.00	0.08-0.13	0.0-2.9	0.0-0.5	.17	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
17D:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Lily-------------	0-3	50-80	10-40	8-20	1.20-1.40	4.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.17	.24	2	3	86
	3-17	35-80	10-45	8-20	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.32	.43			
	17-32	25-75	10-45	18-35	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.28	.37			
	32-42	---	---	---	---	0.00-4.00	---	---	---	---	---			
McClung----------	0-3	50-90	5-45	5-20	1.25-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.24	.24	5	3	86
	3-11	25-80	5-50	10-25	1.20-1.50	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.24			
	11-19	25-80	5-50	10-27	1.30-1.60	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.20	.20			
	19-65	20-75	5-50	18-40	1.30-1.60	4.00-14.00	0.06-0.13	0.0-2.9	0.0-0.5	.24	.24			
18E:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Lily-------------	0-3	50-80	10-40	8-20	1.20-1.40	4.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.17	.24	2	3	86
	3-17	35-80	10-45	8-20	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.32	.43			
	17-32	25-75	10-45	18-35	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.28	.37			
	32-42	---	---	---	---	0.00-4.00	---	---	---	---	---			
19E:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.														

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
20E:														
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
Watahala---------	0-3	50-70	10-35	10-20	1.20-1.45	14.00-42.00	0.05-0.06	0.0-2.9	0.5-2.5	.10	.20	4	3	48
	3-27	18-45	35-65	10-25	1.25-1.45	14.00-42.00	0.09-0.15	0.0-2.9	0.0-0.5	.24	.49			
	27-37	18-50	25-60	18-35	1.40-1.55	4.00-14.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	37-61	1-30	15-50	43-70	1.50-1.65	1.40-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.17	.24			
McClung----------	0-3	50-90	5-45	5-20	1.25-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.24	.24	5	3	86
	3-11	25-80	5-50	10-25	1.20-1.50	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.24			
	11-19	25-80	5-50	10-27	1.30-1.60	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.20	.20			
	19-65	20-75	5-50	18-40	1.30-1.60	4.00-14.00	0.06-0.13	0.0-2.9	0.0-0.5	.24	.24			
21A:														
Dunning----------	0-3	15-45	50-75	12-27	1.20-1.40	4.00-14.00	0.21-0.22	0.0-2.9	2.0-8.0	.24	.24	5	6	48
	3-10	15-45	45-75	12-35	1.20-1.40	4.00-14.00	0.14-0.22	0.0-2.9	2.0-8.0	.28	.28			
	10-32	2-20	20-65	35-60	1.40-1.65	0.42-1.41	0.11-0.15	3.0-5.9	1.0-3.0	.32	.32			
	32-60	2-75	35-70	10-60	1.40-1.65	0.42-1.41	0.05-0.22	3.0-5.9	0.5-3.0	.32	.32			
22B, 22C, 22D:														
Escatawba--------	0-3	25-50	30-50	10-25	1.15-1.30	4.00-14.00	0.15-0.19	0.0-2.9	0.5-3.0	.28	.32	5	6	48
	3-17	15-75	15-75	10-25	1.30-1.55	4.00-14.00	0.12-0.22	0.0-2.9	0.0-0.5	.43	.43			
	17-30	15-50	25-60	18-34	1.30-1.55	4.00-14.00	0.08-0.22	0.0-2.9	0.0-0.5	.37	.37			
	30-50	15-40	25-55	35-50	1.30-1.55	1.40-4.00	0.07-0.13	0.0-2.9	0.0-0.5	.24	.32			
	50-60	15-35	10-45	35-65	1.30-1.55	1.40-4.00	0.06-0.13	0.0-2.9	0.0-0.5	.15	.28			
23C, 23D, 23E:														
Faywood----------	0-6	5-20	45-65	27-40	1.30-1.40	4.00-14.00	0.11-0.15	0.0-2.9	0.5-2.5	.37	.37	2	6	48
	6-24	5-30	20-60	35-60	1.35-1.45	0.42-4.00	0.09-0.15	3.0-5.9	0.0-0.5	.24	.28			
	24-34	---	---	---	---	0.00-4.00	---	---	---	---	---			
Poplimento-------	0-5	5-20	45-65	27-40	1.30-1.45	4.00-14.00	0.13-0.15	3.0-5.9	0.5-2.5	.32	.32	5	6	48
	5-20	2-30	20-60	35-60	1.30-1.60	1.40-4.00	0.10-0.15	6.0-8.9	0.0-0.5	.28	.28			
	20-35	2-30	20-60	35-60	1.30-1.60	1.40-4.00	0.04-0.15	6.0-8.9	0.0-0.5	.28	.28			
	35-60	2-20	45-65	27-50	1.25-1.50	1.40-4.00	0.04-0.14	3.0-5.9	0.0-0.5	.32	.43			
24C, 24D:														
Frederick--------	0-3	15-35	50-70	13-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.28	.37	5	6	48
	3-8	15-45	20-70	15-40	1.25-1.50	14.00-42.00	0.06-0.22	0.0-2.9	0.0-1.0	.32	.43			
	8-20	2-30	20-50	35-60	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.32	.32			
	20-72	0-30	10-50	40-80	1.20-1.50	4.00-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.20	.20			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
25C, 25D:														
Frederick--------	0-3	15-35	50-70	13-27	1.25-1.50	14.00-42.00	0.12-0.15	0.0-2.9	0.5-2.5	.20	.37	5	6	38
	3-8	15-45	20-70	15-40	1.25-1.50	14.00-42.00	0.06-0.22	0.0-2.9	0.0-1.0	.32	.43			
	8-20	2-30	20-50	35-60	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.32	.32			
	20-72	0-30	10-50	40-80	1.20-1.50	4.00-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.20	.20			
Watahala---------	0-3	50-70	10-35	10-20	1.20-1.45	14.00-42.00	0.05-0.06	0.0-2.9	0.5-2.5	.10	.20	4	3	48
	3-27	18-45	35-65	10-25	1.25-1.45	14.00-42.00	0.09-0.15	0.0-2.9	0.0-0.5	.24	.49			
	27-37	18-50	25-60	18-35	1.40-1.55	4.00-14.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	37-61	1-30	15-50	43-70	1.50-1.65	1.40-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.17	.24			
26C, 26D:														
Gilpin-----------	0-2	15-35	50-70	15-27	1.20-1.40	4.00-14.00	0.17-0.21	0.0-2.9	0.5-2.5	.28	.37	3	6	48
	2-7	15-45	30-70	15-27	1.20-1.40	4.00-14.00	0.11-0.20	0.0-2.9	0.0-0.5	.32	.49			
	7-26	15-45	30-70	18-35	1.20-1.50	4.00-14.00	0.07-0.20	0.0-2.9	0.0-0.5	.28	.43			
	26-32	15-30	35-70	15-35	1.20-1.50	4.00-14.00	0.05-0.11	0.0-2.9	0.0-0.2	.20	.43			
	32-42	---	---	---	---	1.40-42.00	---	---	---	---	---			
27A, 28A:														
Gladehill--------	0-7	35-50	35-50	7-18	1.35-1.60	14.00-42.00	0.14-0.19	0.0-2.9	1.0-5.0	.24	.24	5	5	56
	7-14	40-80	10-45	5-18	1.45-1.70	14.00-42.00	0.10-0.19	0.0-2.9	1.0-3.0	.20	.20			
	14-40	40-80	10-45	5-18	1.45-1.70	14.00-42.00	0.10-0.19	0.0-2.9	0.2-3.0	.20	.20			
	40-60	40-75	10-45	5-25	1.45-1.70	14.00-42.00	0.07-0.19	0.0-2.9	0.2-3.0	.20	.20			
29.														
Landfills														
30C, 30D, 30E:														
Lehew------------	0-2	50-75	15-35	5-15	1.20-1.40	14.00-141.00	0.07-0.10	0.0-2.9	0.5-2.0	.17	.28	2	3	56
	2-15	35-75	15-50	5-18	1.20-1.40	14.00-141.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.49			
	15-27	35-75	15-50	5-18	1.20-1.40	14.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	27-37	---	---	---	---	0.00-4.00	---	---	---	---	---			
Berks------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
31F:														
Lehew------------	0-2	50-75	15-35	5-15	1.20-1.40	14.00-141.00	0.07-0.10	0.0-2.9	0.5-2.0	.17	.28	2	3	56
	2-15	35-75	15-50	5-18	1.20-1.40	14.00-141.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.49			
	15-27	35-75	15-50	5-18	1.20-1.40	14.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	27-37	---	---	---	---	0.00-4.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
31F:														
Berks------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
Rock outcrop.														
32C, 33D:														
Lily-------------	0-3	50-80	10-40	8-20	1.20-1.40	4.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.17	.24	2	3	86
	3-17	35-80	10-45	8-20	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.32	.43			
	17-32	25-75	10-45	18-35	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.28	.37			
	32-42	---	---	---	---	0.00-4.00	---	---	---	---	---			
34C:														
Lily-------------	0-3	50-80	10-40	8-20	1.20-1.40	4.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.17	.24	2	3	86
	3-17	35-80	10-45	8-20	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.32	.43			
	17-32	25-75	10-45	18-35	1.25-1.35	14.00-42.00	0.07-0.17	0.0-2.9	0.0-0.5	.28	.37			
	32-42	---	---	---	---	0.00-4.00	---	---	---	---	---			
McClung----------	0-3	50-90	5-45	5-20	1.25-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.24	.24	5	3	86
	3-11	25-80	5-50	10-25	1.20-1.50	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.24			
	11-19	25-80	5-50	10-27	1.30-1.60	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.20	.20			
	19-65	20-75	5-50	18-40	1.30-1.60	4.00-14.00	0.06-0.13	0.0-2.9	0.0-0.5	.24	.24			
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
35C:														
Macove-----------	0-1	10-30	50-70	10-25	1.20-1.40	14.00-42.00	0.13-0.15	0.0-2.9	0.5-3.0	.24	.37	5	6	38
	1-4	15-50	30-65	10-25	1.20-1.40	14.00-42.00	0.11-0.18	0.0-2.9	0.0-0.5	.15	.32			
	4-7	15-50	30-65	10-25	1.20-1.40	14.00-42.00	0.07-0.15	0.0-2.9	0.0-0.5	.20	.43			
	7-65	10-50	40-65	10-35	1.20-1.50	14.00-42.00	0.06-0.18	0.0-2.9	0.0-0.5	.10	.37			
36A:														
Massanetta-------	0-12	10-30	40-70	20-27	1.20-1.55	4.00-14.00	0.16-0.22	0.0-2.9	4.0-8.0	.24	.24	5	6	48
	12-39	15-45	30-65	20-32	1.35-1.65	4.00-14.00	0.11-0.22	0.0-2.9	1.0-3.0	.32	.32			
	39-61	15-65	20-70	10-32	1.30-1.60	4.00-14.00	0.10-0.22	0.0-2.9	0.5-3.0	.32	.32			
	61-70	15-85	5-70	5-50	1.30-1.60	4.00-14.00	0.08-0.22	0.0-2.9	0.5-3.0	.17	.17			
37D:														
McClung----------	0-3	50-90	5-45	5-20	1.25-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.24	.24	5	3	86
	3-11	25-80	5-50	10-25	1.20-1.50	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.24			
	11-19	25-80	5-50	10-27	1.30-1.60	4.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.20	.20			
	19-65	20-75	5-50	18-40	1.30-1.60	4.00-14.00	0.06-0.13	0.0-2.9	0.0-0.5	.24	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
37D:														
Watahala----------	0-3	50-70	10-35	10-20	1.20-1.45	14.00-42.00	0.05-0.06	0.0-2.9	0.5-2.5	.10	.20	4	3	48
	3-27	18-45	35-65	10-25	1.25-1.45	14.00-42.00	0.09-0.15	0.0-2.9	0.0-0.5	.24	.49			
	27-37	18-50	25-60	18-35	1.40-1.55	4.00-14.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	37-61	1-30	15-50	43-70	1.50-1.65	1.40-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.17	.24			
Dekalb-----------	0-2	50-80	10-40	8-18	1.40-1.55	42.00-141.00	0.08-0.11	0.0-2.9	0.5-2.0	.17	.24	2	3	56
	2-30	35-80	10-45	8-18	1.40-1.55	42.00-141.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
	30-40	---	---	---	---	0.00-4.00	---	---	---	---	---			
38B, 38C, 38D:														
Murrill----------	0-4	30-50	30-50	10-20	1.20-1.50	4.00-14.00	0.14-0.16	0.0-2.9	0.5-3.0	.24	.28	5	6	48
	4-10	15-75	20-60	10-25	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.28	.43			
	10-40	15-50	30-65	18-35	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.24	.37			
	40-65	5-30	30-60	27-55	1.40-1.70	1.40-14.00	0.09-0.15	3.0-5.9	0.0-0.5	.32	.32			
39C, 39D:														
Murrill----------	0-4	30-50	30-50	10-20	1.20-1.50	4.00-14.00	0.17-0.19	0.0-2.9	0.5-3.0	.15	.28	5	6	38
	4-10	15-75	20-60	10-25	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.28	.43			
	10-40	15-50	30-65	18-35	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.24	.37			
	40-65	5-30	30-60	27-55	1.40-1.70	1.40-14.00	0.09-0.15	3.0-5.9	0.0-0.5	.32	.32			
40B, 40C:														
Nicelytown-------	0-5	15-40	50-75	7-27	1.35-1.60	4.00-14.00	0.19-0.22	0.0-2.9	0.5-3.0	.37	.37	5	6	48
	5-8	15-70	20-75	7-27	1.35-1.60	1.40-4.00	0.14-0.22	0.0-2.9	0.5-2.0	.49	.49			
	8-34	10-50	20-70	18-35	1.45-1.70	1.40-4.00	0.08-0.22	0.0-2.9	0.0-0.5	.32	.37			
	34-65	10-50	20-70	18-35	1.45-1.70	1.40-4.00	0.06-0.19	0.0-2.9	0.0-0.5	.43	.43			
41A:														
Ogles------------	0-5	25-50	30-45	15-27	1.20-1.40	14.00-42.00	0.09-0.12	0.0-2.9	1.0-4.0	.05	.24	5	6	0
	5-28	30-80	10-45	12-27	1.40-1.60	14.00-42.00	0.05-0.13	0.0-2.9	0.5-2.0	.05	.20			
	28-60	55-85	2-30	10-20	1.50-1.70	14.00-42.00	0.02-0.09	0.0-2.9	0.0-1.0	.05	.20			
42B, 43C, 43D, 43E:														
Oriskany--------	0-6	50-75	15-35	5-15	1.20-1.40	14.00-42.00	0.10-0.12	0.0-2.9	0.5-3.0	.05	.15	5	3	56
	6-11	30-75	15-35	5-25	1.20-1.40	14.00-42.00	0.05-0.17	0.0-2.9	0.0-0.5	.10	.24			
	11-65	30-75	15-50	15-35	1.25-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
44E:														
Oriskany---------	0-6	50-75	15-35	5-15	1.20-1.40	14.00-42.00	0.09-0.09	0.0-2.9	0.5-3.0	.02	.15	5	3	48
	6-11	30-75	15-35	5-25	1.20-1.40	14.00-42.00	0.05-0.17	0.0-2.9	0.0-0.5	.10	.24			
	11-65	30-75	15-50	15-35	1.25-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
45C, 45D, 45E:														
Oriskany----------	0-6	50-75	15-35	5-15	1.20-1.40	14.00-42.00	0.10-0.12	0.0-2.9	0.5-3.0	.05	.15	5	3	56
	6-11	30-75	15-35	5-25	1.20-1.40	14.00-42.00	0.05-0.17	0.0-2.9	0.0-0.5	.10	.24			
	11-65	30-75	15-50	15-35	1.25-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
Murrill-----------	0-4	30-50	30-50	10-20	1.20-1.50	4.00-14.00	0.17-0.19	0.0-2.9	0.5-3.0	.15	.28	5	6	38
	4-10	15-75	20-60	10-25	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.28	.43			
	10-40	15-50	30-65	18-35	1.40-1.70	4.00-14.00	0.09-0.19	0.0-2.9	0.0-0.5	.24	.37			
	40-65	5-30	30-60	27-55	1.40-1.70	1.40-14.00	0.09-0.15	3.0-5.9	0.0-0.5	.32	.32			
46A:														
Purdy-------------	0-8	2-20	45-70	27-40	1.30-1.50	1.40-4.00	0.14-0.15	3.0-5.9	0.5-3.0	.37	.37	3	6	48
	8-13	2-30	35-70	20-40	1.30-1.50	0.01-1.40	0.12-0.22	3.0-5.9	0.2-1.5	.49	.49			
	13-31	2-30	25-60	35-55	1.30-1.60	0.01-1.40	0.11-0.15	3.0-5.9	0.0-0.5	.37	.37			
	31-60	2-30	25-55	35-55	1.30-1.60	0.01-1.40	0.11-0.13	3.0-5.9	0.0-0.5	.28	.28			
47C, 47D, 47E:														
Shelocta----------	0-2	20-40	40-65	10-25	1.15-1.30	4.00-14.00	0.18-0.21	0.0-2.9	0.5-3.0	.28	.37	5	6	48
	2-7	15-35	45-65	10-25	1.30-1.55	4.00-14.00	0.11-0.20	0.0-2.9	0.0-0.5	.32	.43			
	7-60	15-35	45-65	18-35	1.30-1.55	4.00-14.00	0.08-0.20	0.0-2.9	0.0-0.5	.28	.43			
	60-65	14-34	40-65	18-35	1.30-1.55	4.00-14.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.43			
Berks-------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
48B, 48C:														
Sugarhol----------	0-2	15-30	50-70	15-27	1.30-1.45	4.00-42.00	0.18-0.22	0.0-2.9	0.5-3.0	.37	.37	5	6	48
	2-11	15-50	20-70	15-30	1.30-1.45	4.00-14.00	0.10-0.22	0.0-2.9	0.0-1.0	.43	.43			
	11-61	5-40	10-60	35-70	1.45-1.60	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.28	.28			
49.														
Udorthents-Rock outcrop														
50.														
Urban land-Udorthents														
51E:														
Watahala----------	0-3	50-70	10-35	10-20	1.20-1.45	14.00-42.00	0.05-0.06	0.0-2.9	0.5-2.5	.10	.20	4	3	48
	3-27	18-45	35-65	10-25	1.25-1.45	14.00-42.00	0.09-0.15	0.0-2.9	0.0-0.5	.24	.49			
	27-37	18-50	25-60	18-35	1.40-1.55	4.00-14.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	37-61	1-30	15-50	43-70	1.50-1.65	1.40-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.17	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
51E:														
Frederick--------	0-3	15-35	50-70	13-27	1.25-1.50	14.00-42.00	0.12-0.15	0.0-2.9	0.5-2.5	.20	.37	5	6	38
	3-8	15-45	20-70	15-40	1.25-1.50	14.00-42.00	0.06-0.22	0.0-2.9	0.0-1.0	.32	.43			
	8-20	2-30	20-50	35-60	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.32	.32			
	20-72	0-30	10-50	40-80	1.20-1.50	4.00-14.00	0.07-0.14	3.0-5.9	0.0-0.5	.20	.20			
52D, 52E, 52F:														
Weikert----------	0-4	15-35	50-70	10-25	1.20-1.40	14.00-42.00	0.11-0.17	0.0-2.9	0.5-2.0	.28	.43	1	5	48
	4-16	15-35	40-70	10-25	1.20-1.40	14.00-42.00	0.06-0.11	0.0-2.9	0.0-0.5	.15	.49			
	16-26	---	---	---	---	1.40-42.00	---	---	---	---	---			
Berks------------	0-4	15-35	50-70	10-25	1.20-1.50	4.00-42.00	0.12-0.17	0.0-2.9	0.5-2.0	.20	.43	2	5	48
	4-11	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.43			
	11-22	10-35	35-70	10-32	1.20-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.5	.17	.43			
	22-27	10-45	35-70	10-25	1.20-1.60	14.00-42.00	0.02-0.11	0.0-2.9	0.0-0.5	.15	.37			
	27-37	---	---	---	---	1.40-42.00	---	---	---	---	---			
Rough------------	0-1	15-35	50-70	10-25	1.20-1.40	14.00-141.00	0.07-0.11	0.0-2.9	0.5-2.0	.10	.43	1	5	38
	1-5	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.11	0.0-2.9	0.0-0.5	.05	.43			
	5-7	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.09	0.0-2.9	0.0-0.5	.05	.49			
	7-17	---	---	---	---	0.01-4.00	---	---	---	---	---			
53F:														
Weikert----------	0-4	15-35	50-70	10-25	1.20-1.40	14.00-42.00	0.11-0.17	0.0-2.9	0.5-2.0	.28	.43	1	5	48
	4-16	15-35	40-70	10-25	1.20-1.40	14.00-42.00	0.06-0.11	0.0-2.9	0.0-0.5	.15	.49			
	16-26	---	---	---	---	1.40-42.00	---	---	---	---	---			
Rough------------	0-1	15-35	50-70	10-25	1.20-1.40	14.00-141.00	0.07-0.11	0.0-2.9	0.5-2.0	.10	.43	1	5	38
	1-5	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.11	0.0-2.9	0.0-0.5	.05	.43			
	5-7	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.09	0.0-2.9	0.0-0.5	.05	.49			
	7-17	---	---	---	---	0.01-4.00	---	---	---	---	---			
54F:														
Weikert----------	0-4	15-35	50-70	10-25	1.20-1.40	14.00-42.00	0.11-0.17	0.0-2.9	0.5-2.0	.28	.43	1	5	48
	4-16	15-35	40-70	10-25	1.20-1.40	14.00-42.00	0.06-0.11	0.0-2.9	0.0-0.5	.15	.49			
	16-26	---	---	---	---	1.40-42.00	---	---	---	---	---			
Rock outcrop.														
Rough------------	0-1	15-35	50-70	10-25	1.20-1.40	14.00-141.00	0.07-0.11	0.0-2.9	0.5-2.0	.10	.43	1	5	38
	1-5	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.11	0.0-2.9	0.0-0.5	.05	.43			
	5-7	15-35	35-70	10-25	1.20-1.40	14.00-141.00	0.03-0.09	0.0-2.9	0.0-0.5	.05	.49			
	7-17	---	---	---	---	0.01-4.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
55C, 55D:														
Wharton----------	0-3	15-35	50-70	10-25	1.10-1.30	4.00-14.00	0.15-0.22	0.0-2.9	0.5-2.5	.43	.43	4	6	48
	3-8	15-35	40-65	15-30	1.10-1.30	4.00-14.00	0.11-0.22	0.0-2.9	0.0-0.5	.49	.49			
	8-44	10-30	35-65	20-50	1.20-1.50	0.42-4.00	0.08-0.15	3.0-5.9	0.0-0.5	.49	.49			
	44-62	10-30	35-60	20-50	1.20-1.60	0.42-4.00	0.05-0.22	3.0-5.9	0.0-0.5	.43	.49			
Blairton---------	0-9	15-35	45-65	10-27	1.40-1.60	4.00-14.00	0.17-0.22	0.0-2.9	0.5-2.5	.43	.43	2	5	56
	9-31	10-30	45-65	18-35	1.50-1.70	1.40-4.00	0.11-0.22	0.0-2.9	0.0-0.5	.43	.49			
	31-38	10-30	40-65	20-50	1.40-1.60	1.40-4.00	0.06-0.18	0.0-2.9	0.0-0.5	.20	.55			
	38-48	---	---	---	---	0.01-4.00	---	---	---	---	---			
56A, 57A:														
Wolfgap----------	0-18	35-50	30-50	12-20	1.45-1.65	4.00-14.00	0.15-0.19	0.0-2.9	1.0-5.0	.24	.24	5	5	56
	18-60	15-75	10-65	18-35	1.45-1.65	4.00-14.00	0.08-0.22	0.0-2.9	0.2-3.0	.37	.37			
58B:														
Zoar-------------	0-8	15-30	50-65	15-27	1.20-1.40	4.00-14.00	0.21-0.22	0.0-2.9	0.5-3.0	.37	.37	3	6	48
	8-15	5-30	50-75	15-35	1.20-1.40	4.00-14.00	0.14-0.22	0.0-2.9	0.2-1.5	.43	.43			
	15-42	5-20	25-60	35-50	1.30-1.60	0.42-4.00	0.12-0.15	3.0-5.9	0.0-0.5	.37	.37			
	42-60	5-20	25-60	35-50	1.40-1.70	0.42-1.40	0.12-0.15	3.0-5.9	0.0-0.5	.37	.37			
59B:														
Zoar-------------	0-8	15-30	50-65	15-27	1.20-1.40	4.00-14.00	0.21-0.22	0.0-2.9	0.5-3.0	.37	.37	3	6	48
	8-15	5-30	50-75	15-35	1.20-1.40	4.00-14.00	0.14-0.22	0.0-2.9	0.2-1.5	.43	.43			
	15-42	5-20	25-60	35-50	1.30-1.60	0.42-4.00	0.12-0.15	3.0-5.9	0.0-0.5	.37	.37			
	42-60	5-20	25-60	35-50	1.40-1.70	0.42-1.40	0.12-0.15	3.0-5.9	0.0-0.5	.37	.37			
Urban land.														
W.														
Water														

Table 17.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
1A, 2A:					
Alonzville-----------	0-5	6.0-14	4.5-10	4.5-5.5	0
	5-15	3.6-10	2.7-7.6	4.5-5.5	0
	15-55	5.6-11	4.2-8.1	4.5-5.5	0
	55-65	2.5-9.6	1.9-7.2	4.5-5.5	0
3C:					
Alticrest------------	0-4	3.1-9.0	2.3-6.8	4.0-5.5	0
	4-30	2.0-5.6	1.5-4.2	4.0-5.5	0
	30-40	---	---	---	---
Dekalb---------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
4D, 4E:					
Berks----------------	0-4	3.6-11	2.7-8.1	5.0-6.5	0
	4-11	2.5-9.1	1.9-6.8	5.0-6.5	0
	11-22	2.5-9.1	1.9-6.8	5.0-6.5	0
	22-27	2.5-7.4	1.9-5.5	5.0-6.5	0
	27-37	---	---	---	---
5C:					
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
Weikert--------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	3.5-5.5	0
	16-26	---	---	---	---
6F:					
Berks----------------	0-4	3.6-11	2.7-8.1	5.0-6.5	0
	4-11	2.5-9.1	1.9-6.8	5.0-6.5	0
	11-22	2.5-9.1	1.9-6.8	5.0-6.5	0
	22-27	2.5-7.4	1.9-5.5	5.0-6.5	0
	27-37	---	---	---	---
Weikert--------------	0-4	3.6-11	2.7-8.1	4.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	4.5-5.5	0
	16-26	---	---	---	---
7D, 7E:					
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
Weikert--------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	3.5-5.5	0
	16-26	---	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
8E, 8F, 9D:					
Caneyville	0-10	3.6-12	2.7-8.9	4.5-7.3	0
	10-16	9.0-16	6.8-12	4.5-7.3	0
	16-29	10-16	7.5-12	5.6-7.3	0
	29-39	---	---	---	---
10C, 10D, 10E:					
Caneyville	0-10	3.6-12	2.7-8.9	4.5-7.3	0
	10-16	9.0-16	6.8-12	4.5-7.3	0
	16-29	10-16	7.5-12	5.6-7.3	0
	29-39	---	---	---	---
Frederick	0-3	4.4-12	3.3-9.3	4.5-6.0	0
	3-8	3.8-12	2.8-9.2	4.5-6.0	0
	8-20	8.8-16	6.6-12	4.5-6.0	0
	20-72	10-21	7.5-16	4.5-6.0	0
11B, 11C:					
Cottonbend	0-8	3.6-13	2.7-9.8	4.5-5.5	0
	8-17	3.1-10	2.3-7.6	4.5-5.5	0
	17-52	4.5-9.9	3.5-7.4	4.5-5.5	0
	52-72	3.8-14	3.0-10	4.5-5.5	0
12B, 12C:					
Cottonbend	0-8	3.6-13	2.7-9.8	4.5-5.5	0
	8-17	3.1-10	2.3-7.6	4.5-5.5	0
	17-52	4.5-9.9	3.5-7.4	4.5-5.5	0
	52-72	3.8-14	3.0-10	4.5-5.5	0
Urban land.					
13A:					
Coursey	0-5	6.8-14	5.1-10	3.5-5.5	0
	5-12	4.9-11	3.7-8.0	3.5-5.5	0
	12-60	5.6-11	4.2-8.2	3.5-5.5	0
14B:					
Coursey	0-5	6.8-14	5.1-10	3.5-5.5	0
	5-12	4.9-11	3.7-8.0	3.5-5.5	0
	12-60	5.6-11	4.2-8.2	3.5-5.5	0
Ogles	0-5	6.0-16	4.5-12	4.5-6.0	0
	5-28	4.1-11	3.1-8.4	4.5-6.0	0
	28-60	2.5-9.0	1.9-6.8	4.5-6.0	0
Shelocta	0-2	3.6-13	2.7-10	4.5-5.5	0
	2-7	2.5-7.4	1.9-5.5	4.5-5.5	0
	7-60	4.5-9.9	3.4-7.4	4.5-5.5	0
	60-65	4.5-9.9	3.4-7.4	4.5-5.5	0
15F:					
Dekalb	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
16D, 16E:					
Dekalb----------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
Alticrest------------	0-4	3.1-9.0	2.3-6.8	4.0-5.5	0
	4-30	2.0-5.6	1.5-4.2	4.0-5.5	0
	30-40	---	---	---	---
17D:					
Dekalb----------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
Lily------------------	0-3	2.9-9.5	2.2-7.1	3.5-5.5	0
	3-17	2.0-6.1	1.5-4.6	3.5-5.5	0
	17-32	4.7-9.9	3.5-7.4	3.5-5.5	0
	32-42	---	---	---	---
McClung--------------	0-3	1.0-6.0	1.0-5.0	4.0-5.5	0
	3-11	3.0-7.0	2.0-6.0	4.0-5.5	0
	11-19	3.0-8.0	2.0-6.0	4.0-5.5	0
	19-65	5.0-11	3.0-8.0	4.0-5.5	0
18E:					
Dekalb----------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
Lily------------------	0-3	2.9-9.5	2.2-7.1	3.5-5.5	0
	3-17	2.0-6.1	1.5-4.6	3.5-5.5	0
	17-32	4.7-9.9	3.5-7.4	3.5-5.5	0
	32-42	---	---	---	---
19E:					
Dekalb----------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
Rock outcrop.					
20E:					
Dekalb----------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
Watahala-------------	0-3	3.6-11	2.7-8.0	4.0-5.5	0
	3-27	2.5-7.4	1.9-5.5	4.0-5.5	0
	27-37	5.0-9.9	3.8-7.4	4.0-5.5	0
	37-61	10-19	7.9-14	4.5-5.5	0
McClung--------------	0-3	1.0-6.0	1.0-5.0	4.0-5.5	0
	3-11	3.0-7.0	2.0-6.0	4.0-5.5	0
	11-19	3.0-8.0	2.0-6.0	4.0-5.5	0
	19-65	5.0-11	3.0-8.0	4.0-5.5	0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
21A:					
Dunning	0-3	7.5-25	5.6-19	6.1-7.8	0
	3-10	7.5-27	5.6-20	6.1-7.8	0
	10-32	11-22	8.2-16	6.1-7.8	0
	32-60	3.6-22	2.7-16	6.1-7.8	0
22B, 22C, 22D:					
Escatawba	0-3	3.6-13	2.7-9.8	3.5-5.5	0
	3-17	2.5-7.4	1.9-5.5	3.5-5.5	0
	17-30	4.5-9.6	3.4-7.2	4.5-5.5	0
	30-50	8.8-14	6.6-10	4.5-5.5	0
	50-60	8.8-17	6.6-13	4.5-5.5	0
23C:					
Faywood	0-6	7.9-16	5.9-12	6.1-7.8	0
	6-24	8.8-16	6.6-12	6.1-7.8	0
	24-34	---	---	---	---
Poplimento	0-5	7.9-16	5.9-12	4.5-6.5	0
	5-20	8.8-16	6.6-12	4.5-6.5	0
	20-35	8.8-16	6.6-12	4.5-6.5	0
	35-60	6.8-14	5.1-10	4.5-6.5	0
23D, 23E:					
Faywood	0-6	7.9-16	5.9-12	6.1-7.8	0
	6-24	8.8-16	6.6-12	6.1-7.8	0
	24-34	---	---	---	---
Poplimento	0-5	7.9-16	5.9-12	4.5-6.5	0
	5-20	8.8-16	6.6-12	4.5-6.5	0
	20-35	8.8-16	6.6-12	4.5-6.5	0
	35-60	6.8-14	5.1-10	4.5-6.5	0
24C, 24D:					
Frederick	0-3	4.4-12	3.3-9.3	4.5-6.0	0
	3-8	3.8-12	2.8-9.2	4.5-6.0	0
	8-20	8.8-16	6.6-12	4.5-6.0	0
	20-72	10-21	7.5-16	4.5-6.0	0
25C, 25D:					
Frederick	0-3	4.4-12	3.3-9.3	4.5-6.0	0
	3-8	3.8-12	2.8-9.2	4.5-6.0	0
	8-20	8.8-16	6.6-12	4.5-6.0	0
	20-72	10-21	7.5-16	4.5-6.0	0
Watahala	0-3	3.6-11	2.7-8.0	4.0-5.5	0
	3-27	2.5-7.4	1.9-5.5	4.0-5.5	0
	27-37	5.0-9.9	3.8-7.4	4.0-5.5	0
	37-61	10-19	7.9-14	4.5-5.5	0
26C, 26D:					
Gilpin	0-2	4.9-12	3.7-9.3	3.5-5.5	0
	2-7	3.8-7.9	2.8-5.9	3.5-5.5	0
	7-26	4.5-9.9	3.4-7.4	3.5-5.5	0
	26-32	3.8-9.3	2.8-7.0	3.5-5.5	0
	32-42	---	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
27A, 28A:					
Gladehill------------	0-7	4.0-16	3.0-12	6.1-7.3	0
	7-14	3.5-11	2.6-8.4	6.1-7.3	0
	14-40	1.8-11	1.4-8.4	6.1-7.3	0
	40-60	1.8-13	1.4-9.8	6.1-7.3	0
29.					
Landfills					
30C, 30D, 30E:					
Lehew----------------	0-2	2.1-8.2	1.6-6.2	3.5-5.5	0
	2-15	1.2-5.6	0.9-4.2	3.5-5.5	0
	15-27	1.2-5.6	0.9-4.2	3.5-5.5	0
	27-37	---	---	---	---
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
31F:					
Lehew----------------	0-2	2.1-8.2	1.6-6.2	3.5-5.5	0
	2-15	1.2-5.6	0.9-4.2	3.5-5.5	0
	15-27	1.2-5.6	0.9-4.2	3.5-5.5	0
	27-37	---	---	---	---
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
Rock outcrop.					
32C, 33D:					
Lily-----------------	0-3	2.9-9.5	2.2-7.1	3.5-5.5	0
	3-17	2.0-6.1	1.5-4.6	3.5-5.5	0
	17-32	4.7-9.9	3.5-7.4	3.5-5.5	0
	32-42	---	---	---	---
34C:					
Lily-----------------	0-3	2.9-9.5	2.2-7.1	3.5-5.5	0
	3-17	2.0-6.1	1.5-4.6	3.5-5.5	0
	17-32	4.7-9.9	3.5-7.4	3.5-5.5	0
	32-42	---	---	---	---
McClung--------------	0-3	1.0-6.0	1.0-5.0	4.0-5.5	0
	3-11	3.0-7.0	2.0-6.0	4.0-5.5	0
	11-19	3.0-8.0	2.0-6.0	4.0-5.5	0
	19-65	5.0-11	3.0-8.0	4.0-5.5	0
Dekalb---------------	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
35C:					
Macove	0-1	3.6-13	2.7-9.8	4.5-5.5	0
	1-4	2.5-7.4	1.9-5.5	4.5-5.5	0
	4-7	2.5-7.4	1.9-5.5	4.5-5.5	0
	7-65	2.5-9.9	1.9-7.4	4.5-5.5	0
36A:					
Massanetta	0-12	16-27	12-21	7.4-8.4	0-10
	12-39	9.2-18	6.9-14	7.4-8.4	5-15
	39-61	4.6-18	3.5-14	7.4-8.4	5-15
	61-70	2.9-24	2.2-18	7.4-8.4	5-15
37D:					
McClung	0-3	1.0-6.0	1.0-5.0	4.0-5.5	0
	3-11	3.0-7.0	2.0-6.0	4.0-5.5	0
	11-19	3.0-8.0	2.0-6.0	4.0-5.5	0
	19-65	5.0-11	3.0-8.0	4.0-5.5	0
Watahala	0-3	3.6-11	2.7-8.0	4.0-5.5	0
	3-27	2.5-7.4	1.9-5.5	4.0-5.5	0
	27-37	5.0-9.9	3.8-7.4	4.0-5.5	0
	37-61	10-19	7.9-14	4.5-5.5	0
Dekalb	0-2	3.1-9.5	2.3-7.1	3.5-5.5	0
	2-30	2.0-6.1	1.5-4.6	3.5-5.5	0
	30-40	---	---	---	---
38B, 38C, 38D, 39C, 39D:					
Murrill	0-4	3.6-12	2.7-8.8	4.5-6.0	0
	4-10	2.5-7.4	1.9-5.5	4.5-6.0	0
	10-40	4.5-9.9	3.4-7.4	4.5-6.0	0
	40-65	6.8-15	5.1-11	4.5-6.0	0
40B, 40C:					
Nicelytown	0-5	2.9-14	2.2-10	4.5-5.5	0
	5-8	2.9-11	2.2-8.4	4.5-5.5	0
	8-34	4.5-9.9	4.4-7.4	4.5-5.5	0
	34-65	4.5-9.9	4.4-7.4	4.5-5.5	0
41A:					
Ogles	0-5	6.0-16	4.5-12	4.5-6.0	0
	5-28	4.1-11	3.1-8.4	4.5-6.0	0
	28-60	2.5-9.0	1.9-6.8	4.5-6.0	0
42B, 43C, 43D, 43E, 44E:					
Oriskany	0-6	2.4-10	1.8-7.9	4.5-5.5	0
	6-11	1.2-7.4	0.9-5.5	4.5-5.5	0
	11-65	3.9-9.5	2.9-7.2	4.5-5.5	0
45C, 45D, 45E:					
Oriskany	0-6	2.4-10	1.8-7.9	4.5-5.5	0
	6-11	1.2-7.4	0.9-5.5	4.5-5.5	0
	11-65	3.9-9.5	2.9-7.2	4.5-5.5	0
Murrill	0-4	3.6-12	2.7-8.8	4.5-6.0	0
	4-10	2.5-7.4	1.9-5.5	4.5-6.0	0
	10-40	4.5-9.9	3.4-7.4	4.5-6.0	0
	40-65	6.8-15	5.1-11	4.5-6.0	0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
46A:					
Purdy----------------	0-8	7.9-17	5.9-13	3.5-5.5	0
	8-13	5.6-13	4.2-10	3.5-5.5	0
	13-31	8.8-14	6.6-10	3.5-5.5	0
	31-60	8.8-14	6.6-10	3.5-5.5	0
47C, 47D, 47E:					
Shelocta-------------	0-2	3.6-13	2.7-10	4.5-5.5	0
	2-7	2.5-7.4	1.9-5.5	4.5-5.5	0
	7-60	4.5-9.9	3.4-7.4	4.5-5.5	0
	60-65	4.5-9.9	3.4-7.4	4.5-5.5	0
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
48B, 48C:					
Sugarhol-------------	0-2	4.9-14	3.7-10	3.5-5.5	0
	2-11	3.8-9.8	2.8-7.3	3.5-5.5	0
	11-61	8.8-19	6.6-14	3.5-5.5	0
49.					
Udorthents-Rock outcrop					
50.					
Urban land-Udorthents					
51E:					
Watahala-------------	0-3	3.6-11	2.7-8.0	4.0-5.5	0
	3-27	2.5-7.4	1.9-5.5	4.0-5.5	0
	27-37	5.0-9.9	3.8-7.4	4.0-5.5	0
	37-61	10-19	7.9-14	4.5-5.5	0
Frederick------------	0-3	4.4-12	3.3-9.3	4.5-6.0	0
	3-8	3.8-12	2.8-9.2	4.5-6.0	0
	8-20	8.8-16	6.6-12	4.5-6.0	0
	20-72	10-21	7.5-16	4.5-6.0	0
52D, 52E, 52F:					
Weikert--------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	3.5-5.5	0
	16-26	---	---	---	---
Berks----------------	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-11	2.5-9.1	1.9-6.8	3.5-5.5	0
	11-22	2.5-9.1	1.9-6.8	3.5-5.5	0
	22-27	2.5-7.4	1.9-5.5	3.5-5.5	0
	27-37	---	---	---	---
Rough----------------	0-1	3.6-11	2.7-8.1	3.5-5.5	0
	1-5	2.5-7.4	1.9-5.5	3.5-5.5	0
	5-7	2.5-7.4	1.9-5.5	3.5-5.5	0
	7-17	---	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
53F:					
Weikert	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	3.5-5.5	0
	16-26	---	---	---	---
Rough	0-1	3.6-11	2.7-8.1	3.5-5.5	0
	1-5	2.5-7.4	1.9-5.5	3.5-5.5	0
	5-7	2.5-7.4	1.9-5.5	3.5-5.5	0
	7-17	---	---	---	---
54F:					
Weikert	0-4	3.6-11	2.7-8.1	3.5-5.5	0
	4-16	2.5-7.4	1.9-5.5	3.5-5.5	0
	16-26	---	---	---	---
Rock outcrop.					
Rough	0-1	3.6-11	2.7-8.1	3.5-5.5	0
	1-5	2.5-7.4	1.9-5.5	3.5-5.5	0
	5-7	2.5-7.4	1.9-5.5	3.5-5.5	0
	7-17	---	---	---	---
55C, 55D:					
Wharton	0-3	3.6-12	2.7-8.9	4.0-5.5	0
	3-8	6.8-8.6	2.8-6.5	4.0-5.5	0
	8-44	4.5-11	3.4-8.3	4.0-5.5	0
	44-62	4.5-11	3.4-8.3	4.0-5.5	0
Blairton	0-9	3.6-12	2.7-9.8	3.5-5.0	0
	9-31	4.5-9.9	3.4-7.4	3.5-5.0	0
	31-38	5.0-14	3.9-10	3.5-5.0	0
	38-48	---	---	---	---
56A, 57A:					
Wolfgap	0-18	5.2-16	3.9-12	6.1-7.3	0
	18-60	5.1-16	3.8-12	6.1-7.3	0
58B:					
Zoar	0-8	4.9-14	3.7-10	4.5-5.5	0
	8-15	4.3-12	3.2-9.1	4.5-5.5	0
	15-42	8.8-14	6.6-10	4.5-5.5	0
	42-60	8.8-14	6.6-10	4.5-5.5	0
59B:					
Zoar	0-8	4.9-14	3.7-10	4.5-5.5	0
	8-15	4.3-12	3.2-9.1	4.5-5.5	0
	15-42	8.8-14	6.6-10	4.5-5.5	0
	42-60	8.8-14	6.6-10	4.5-5.5	0
Urban land.					
W.					
Water					

Table 18.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro- logic group	Surface runoff	Water table			Ponding			Flooding	
			Month	Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
1A:										
Alonzville	B	Low	Jan-May	---	---	---	---	None	Very brief	Rare
			Jun-Oct	---	---	---	---	None	Very brief	Very rare
			Nov-Dec	---	---	---	---	None	Very brief	Rare
2A:										
Alonzville	B	Low	Jan-Dec	---	---	---	---	None	---	None
3C:										
Alticrest	B	High	Jan-Dec	---	---	---	---	None	---	None
Dekalb	C	High	Jan-Dec	---	---	---	---	None	---	None
4D, 4E:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
5C:										
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Weikert	D	Medium	Jan-Dec	---	---	---	---	None	---	None
6F, 7D, 7E:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
8E, 8F, 9D:										
Caneyville	C	Very high	Jan-Dec	---	---	---	---	None	---	None
10C:										
Caneyville	C	High	Jan-Dec	---	---	---	---	None	---	None
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
10D, 10E:										
Caneyville	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
11B, 11C:										
Cottonbend	B	Medium	Jan-Dec	---	---	---	---	None	---	None
12B, 12C:										
Cottonbend	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Urban land	---	Very high	Jan-Dec	---	---	---	---	None	---	None
13A:										
Coursey	C	Low	Jan-May	2.0-3.0	>6.0	---	---	None	Very brief	Rare
			June	3.0-6.6	>6.0	---	---	None	Very brief	Very rare
			Jul-Sep	---	---	---	---	None	Very brief	Very rare
			October	3.0-6.6	>6.0	---	---	None	Very brief	Very rare
			Nov-Dec	2.0-3.0	>6.0	---	---	None	Very brief	Rare
14B:										
Coursey	C	Medium	Jan-May	2.0-3.0	>6.0	---	---	None	Very brief	Rare
			June	3.0-6.6	>6.0	---	---	None	Very brief	Very rare
			Jul-Sep	---	---	---	---	None	Very brief	Very rare
			October	3.0-6.6	>6.0	---	---	None	Very brief	Very rare
			Nov-Dec	2.0-3.0	>6.0	---	---	None	Very brief	Rare
Ogles	B	Very low	Jan-Apr	3.5-6.0	>6.0	---	---	None	Brief	Occasional
			May	6.0-6.6	>6.0	---	---	None	Brief	Occasional
			October	6.0-6.6	>6.0	---	---	None	Brief	Rare
			Nov-Dec	3.5-6.0	>6.0	---	---	None	Brief	Occasional
Shelocta	B	Medium	Jan-Dec	---	---	---	---	None	---	None
15F:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
16D, 16E:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Alticrest	B	Very high	Jan-Dec	---	---	---	---	None	---	None
17D:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
McClung	B	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
18E:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
19E:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
20E:										
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Watahala	B	High	Jan-Dec	---	---	---	---	None	---	None
McClung	B	High	Jan-Dec	---	---	---	---	None	---	None
21A:										
Dunning	D	Very high	Jan-May	0.0-0.5	>6.0	---	---	None	Brief	Occasional
			Jun-Oct	0.0-0.5	>6.0	---	---	None	Brief	Rare
			Nov-Dec	0.0-0.5	>6.0	---	---	None	Brief	Occasional
22B, 22C:										
Escatawba	B	Medium	Jan-May	2.5-4.0	4.0-5.0	---	---	None	---	None
			Jun-Oct	---	---	---	---	None	---	None
			Nov-Dec	2.5-4.0	4.0-5.0	---	---	None	---	None
22D:										
Escatawba	B	High	Jan-May	2.5-4.0	4.0-5.0	---	---	None	---	None
			Jun-Oct	---	---	---	---	None	---	None
			Nov-Dec	2.5-4.0	4.0-5.0	---	---	None	---	None
23C:										
Faywood	C	High	Jan-Dec	---	---	---	---	None	---	None
Poplimento	C	Medium	Jan-Dec	---	---	---	---	None	---	None
23D, 23E:										
Faywood	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Poplimento	C	High	Jan-Dec	---	---	---	---	None	---	None
24C:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
24D:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
25C:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Watahala	B	Medium	Jan-Dec	---	---	---	---	None	---	None
25D:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
Watahala	B	High	Jan-Dec	---	---	---	---	None	---	None
26C:										
Gilpin	C	Medium	Jan-Dec	---	---	---	---	None	---	None
26D:										
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	None
27A, 28A:										
Gladehill	B	Very low	Jan-May	---	---	---	---	None	Brief	Occasional
			Jun-Oct	---	---	---	---	None	Brief	Rare
			Nov-Dec	---	---	---	---	None	Brief	Occasional
29:										
Landfills	---	Low	Jan-Dec	---	---	---	---	None	---	None
30C:										
Lehew	C	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	None
30D, 30E:										
Lehew	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
31F:										
Lehew	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.										
32C:										
Lily	B	High	Jan-Dec	---	---	---	---	None	---	None
33D:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
34C:										
Lily	B	High	Jan-Dec	---	---	---	---	None	---	None
McClung	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Dekalb	C	High	Jan-Dec	---	---	---	---	None	---	None
35C:										
Macove	B	Low	Jan-Dec	---	---	---	---	None	---	None
36A:										
Massanetta	B	Low	Jan-May	2.0-3.5	>6.0	---	---	None	Brief	Occasional
			June	2.0-3.5	>6.0	---	---	None	Brief	Rare
			July	3.5-6.6	>6.0	---	---	None	Brief	Rare
			Aug-Sep	---	---	---	---	None	Brief	Rare
			October	3.5-6.6	>6.0	---	---	None	Brief	Rare
			Nov-Dec	2.0-3.5	>6.0	---	---	None	Brief	Occasional
37D:										
McClung	B	High	Jan-Dec	---	---	---	---	None	---	None
Watahala	B	High	Jan-Dec	---	---	---	---	None	---	None
Dekalb	C	Very high	Jan-Dec	---	---	---	---	None	---	None
38B, 38C:										
Murrill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
38D:										
Murrill	B	High	Jan-Dec	---	---	---	---	None	---	None
39C:										
Murrill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
39D:										
Murrill	B	High	Jan-Dec	---	---	---	---	None	---	None
40B, 40C:										
Nicelytown	C	High	Jan-May	1.5-2.5	>6.0	---	---	None	---	None
			June	2.5-6.6	>6.0	---	---	None	---	None
			Jul-Sep	---	---	---	---	None	---	None
			October	2.5-6.6	>6.0	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
41A:										
Ogles	B	Very low	Jan-Apr	3.5-6.0	>6.0	---	---	None	Brief	Occasional
			May	6.0-6.6	>6.0	---	---	None	Brief	Occasional
			Jun-Sep	---	---	---	---	None	Brief	Rare
			October	6.0-6.6	>6.0	---	---	None	Brief	Rare
			Nov-Dec	3.5-6.0	>6.0	---	---	None	Brief	Occasional
42B, 43C:										
Oriskany	B	Low	Jan-Dec	---	---	---	---	None	---	None
43D, 43E, 44E:										
Oriskany	B	Medium	Jan-Dec	---	---	---	---	None	---	None
45C:										
Oriskany	B	Low	Jan-Dec	---	---	---	---	None	---	None
Murrill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
45D, 45E:										
Oriskany	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Murrill	B	High	Jan-Dec	---	---	---	---	None	---	None
46A:										
Purdy	D	Negligible	Jan-May	0.0-1.0	>6.0	0.0-0.5	Brief	Occasional	---	None
			June	0.0-1.0	>6.0	0.0-0.3	Very brief	Rare	---	None
			Jul-Oct	1.0-6.6	>6.0	---	---	None	---	None
			November	0.0-1.0	>6.0	0.0-0.3	Very brief	Rare	---	None
			December	0.0-1.0	>6.0	0.0-0.5	Brief	Occasional	---	None
47C:										
Shelocta	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	None
47D, 47E:										
Shelocta	B	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
48B, 48C:										
Sugarhol	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
49:										
Udorthents	---	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.										
50:										
Urban land.										
Udorthents	---	Medium	Jan-Dec	---	---	---	---	None	---	None
51E:										
Watahala	B	High	Jan-Dec	---	---	---	---	None	---	None
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
52D, 52E, 52F:										
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Rough	D	Very high	Jan-Dec	---	---	---	---	None	---	None
53F:										
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
Rough	D	Very high	Jan-Dec	---	---	---	---	None	---	None
54F:										
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.										
Rough	D	Very high	Jan-Dec	---	---	---	---	None	---	None
55C, 55D:										
Wharton	C	Medium	Jan-Apr	1.5-3.0	3.3-6.5	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-3.0	3.3-6.5	---	---	None	---	None
Blairton	C	High	Jan-Apr	0.5-3.0	1.7-3.3	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.5-3.0	1.7-3.3	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Water table: Month	Water table: Upper limit	Water table: Lower limit	Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
56A, 57A:										
Wolfgap-------------------	B	Low	Jan-May	---	---	---	---	None	Brief	Occasional
			Jun-Oct	---	---	---	---	None	Brief	Rare
			Nov-Dec	---	---	---	---	None	Brief	Occasional
58B:										
Zoar----------------------	C	High	Jan-Jun	1.5-2.5	>6.0	---	---	None	---	None
			Jul-Sep	---	---	---	---	None	---	None
			October	2.5-6.6	>6.0	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None
59B:										
Zoar----------------------	C	High	Jan-Jun	1.5-2.5	>6.0	---	---	None	---	None
			Jul-Sep	---	---	---	---	None	---	None
			October	2.5-6.6	>6.0	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None
Urban land.										
W.										
Water										

Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
1A, 2A:						
Alonzville	---	---	---	Moderate	Low	High
3C:						
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
4D, 4E:						
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High
5C, 6F, 7D, 7E:						
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High
Weikert	Bedrock (lithic)	10-20	Very strongly cemented	Moderate	Moderate	Moderate
8E, 8F:						
Caneyville	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
9D:						
Caneyville	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
10C, 10D, 10E:						
Caneyville	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
Frederick	---	---	---	Moderate	Moderate	High
11B, 11C:						
Cottonbend	---	---	---	Moderate	Moderate	High
12B, 12C:						
Cottonbend	---	---	---	Moderate	Moderate	High
Urban land.						
13A:						
Coursey	---	---	---	High	Moderate	High
14B:						
Coursey	---	---	---	High	Moderate	High
Ogles	---	---	---	Moderate	Low	Moderate
Shelocta	---	---	---	Moderate	Low	High
15F:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
16D, 16E:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
17D:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Lily	Bedrock (lithic)	20-40	Indurated	Moderate	Moderate	High
McClung	---	---	---	Moderate	High	High
18E:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Lily	Bedrock (lithic)	20-40	Indurated	Moderate	Moderate	High
19E:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Rock outcrop.						
20E:						
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Watahala	---	---	---	Moderate	High	High
McClung	---	---	---	Moderate	High	High
21A:						
Dunning	---	---	---	High	High	Moderate
22B, 22C, 22D:						
Escatawba	---	---	---	Moderate	High	Moderate
23C, 23D, 23E:						
Faywood	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
Poplimento	---	---	---	Moderate	High	Moderate
24C, 24D:						
Frederick	---	---	---	Moderate	Moderate	High
25C, 25D:						
Frederick	---	---	---	Moderate	Moderate	High
Watahala	---	---	---	Moderate	High	High
26C, 26D:						
Gilpin	Bedrock (paralithic)	20-40	Moderately cemented	Moderate	Low	High
27A, 28A:						
Gladehill	---	---	---	Moderate	Low	Low
29. Landfills						
30C, 30D, 30E:						
Lehew	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
31F:						
Lehew	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High
Rock outcrop.						
32C, 33D:						
Lily	Bedrock (lithic)	20-40	Indurated	Moderate	Moderate	High
34C:						
Lily	Bedrock (lithic)	20-40	Indurated	Moderate	Moderate	High
McClung	---	---	---	Moderate	High	High
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
35C:						
Macove	---	---	---	Moderate	Moderate	Moderate
36A:						
Massanetta	---	---	---	High	Low	Low
37D:						
McClung	---	---	---	Moderate	High	High
Watahala	---	---	---	Moderate	High	High
Dekalb	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
38B, 38C, 38D, 39C, 39D:						
Murrill	---	---	---	Moderate	Moderate	High
40B, 40C:						
Nicelytown	---	---	---	High	Moderate	High
41A:						
Ogles	---	---	---	Moderate	Low	Moderate
42B, 43C, 43D, 43E, 44E:						
Oriskany	---	---	---	Moderate	Moderate	High
45C:						
Oriskany	---	---	---	Moderate	Moderate	High
Murrill	---	---	---	Moderate	Moderate	High
45D, 45E:						
Oriskany	---	---	---	Moderate	Moderate	High
Murrill	---	---	---	Moderate	Moderate	High
46A:						
Purdy	---	---	---	High	High	High
47C, 47D, 47E:						
Shelocta	---	---	---	Moderate	Low	High
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
48B, 48C:						
Sugarhol	---	---	---	Moderate	High	Moderate
49.						
Udorthents-Rock outcrop						
50.						
Urban land-Udorthents						
51E:						
Watahala	---	---	---	Moderate	High	High
Frederick	---	---	---	Moderate	Moderate	High
52D, 52E, 52F:						
Weikert	Bedrock (lithic)	10-20	Very strongly cemented	Moderate	Moderate	Moderate
Berks	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	High
Rough	Bedrock (lithic)	4-10	Very strongly cemented	Moderate	High	High
53F:						
Weikert	Bedrock (lithic)	10-20	Very strongly cemented	Moderate	Moderate	Moderate
Rough	Bedrock (lithic)	4-10	Very strongly cemented	Moderate	High	High
54F:						
Weikert	Bedrock (lithic)	10-20	Very strongly cemented	Moderate	Moderate	Moderate
Rock outcrop.						
Rough	Bedrock (lithic)	4-10	Very strongly cemented	Moderate	High	High
55C, 55D:						
Wharton	Bedrock (paralithic)	40-72	Strongly cemented	High	High	High
Blairton	Bedrock (lithic)	20-40	Very strongly cemented	High	High	High
56A, 57A:						
Wolfgap	---	---	---	Moderate	Low	Moderate
58B:						
Zoar	---	---	---	High	High	High
59B:						
Zoar	---	---	---	High	High	High
Urban land.						
W.						
Water						

Table 20.—Classification of the Soils

Soil name	Family or higher taxonomic class
Alonzville	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Alticrest	Coarse-loamy, siliceous, semiactive, mesic Typic Dystrudepts
Berks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Blairton	Fine-loamy, mixed, active, mesic Aquic Hapludults
Caneyville	Fine, mixed, active, mesic Typic Hapludalfs
Cottonbend	Fine-loamy, siliceous, semiactive, mesic Typic Paleudults
Coursey	Fine-loamy, siliceous, semiactive, mesic Aquic Hapludults
Dekalb	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Dunning	Fine, mixed, active, mesic Fluvaquentic Endoaquolls
Escatawba	Fine-loamy, siliceous, semiactive, mesic Oxyaquic Paleudults
Faywood	Fine, mixed, active, mesic Typic Hapludalfs
Frederick	Fine, mixed, semiactive, mesic Typic Paleudults
Gilpin	Fine-loamy, mixed, active, mesic Typic Hapludults
Gladehill	Coarse-loamy, siliceous, superactive, mesic Fluventic Hapludolls
Lehew	Loamy-skeletal, siliceous, semiactive, mesic Typic Dystrudepts
Lily	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Macove	Loamy-skeletal, mixed, active, mesic Typic Hapludults
Massanetta	Fine-loamy, carbonatic, mesic Fluvaquentic Hapludolls
McClung	Fine-loamy, siliceous, semiactive, mesic Typic Paleudults
Murrill	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Nicelytown	Fine-loamy, siliceous, semiactive, mesic Aquic Paleudults
Ogles	Loamy-skeletal, siliceous, active, mesic Fluventic Dystrudepts
Oriskany	Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults
Poplimento	Fine, mixed, subactive, mesic Ultic Hapludalfs
Purdy	Fine, mixed, active, mesic Typic Endoaquults
Rough	Loamy, mixed, active, acid, mesic Lithic Udorthents
Shelocta	Fine-loamy, mixed, active, mesic Typic Hapludults
Sugarhol	Fine, mixed, semiactive, mesic Typic Paleudults
Udorthents	Udorthents
Watahala	Fine-loamy over clayey, siliceous over mixed, subactive, mesic Typic Paleudults
Weikert	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Wharton	Fine-loamy, mixed, active, mesic Aquic Hapludults
Wolfgap	Fine-loamy, siliceous, active, mesic Fluventic Hapludolls
Zoar	Fine, mixed, semiactive, mesic Aquic Hapludults

Table 21.—Relationship of Geology to Soils

Age	Name	Associated map units	Soil series
Quaternary surficial deposits	Floodplain alluvium	21A, 27A, 28A, 36A, 41A, 56A, 57A	Dunning, Gladehill, Massanetta, Ogles, Wolfgap
	Low terrace alluvium	1A, 2A, 13A, 14B	Alonzville, Coursey, Ogles, Shelocta
	High terrace alluvium	11B, 11C, 12B, 12C, 40B, 40C, 46A, 48B, 48C, 58B, 59B	Cottonbend, Nicelytown, Purdy, Sugarhol, Zoar
	Sandstone, shale, and limestone colluvium	22B, 22C, 22D, 35C, 38B, 38C, 38D, 39C, 39D, 42B, 43C, 43D, 43E, 44E, 45C, 45D, 45E, 47C, 47D, 47E	Berks, Escatawba, Macove, Murrill, Oriskany, Shelocta
Mississippian	Mccrady shale	30C, 30D, 30E, 31F	Berks, Lehew
	Pocono Formation	3C, 15F, 16D, 16E, 19E, 32C, 33D	Alticrest, Dekalb, Lily
Devonian	Hampshire Formation	30C, 30D, 30E, 31F	Berks, Lehew
	Chemung Formation	7D, 7E, 52F	Berks, Rough, Weikert
	Brallier Formation	5C, 26C, 26D, 52D, 52E, 52F, 53F, 54F	Berks, Gilpin, Rough, Weikert
	Millboro shale	5C, 26C, 26D, 52D, 52E, 52F, 53F, 54F	Berks, Gilpin, Rough, Weikert
	Needmore shale	26C, 26D, 55C, 55D	Blairton, Gilpin, Wharton
	Ridgeley sandstone (Oriskany)	17D, 18E, 19E, 20E, 34C, 37D	Dekalb, Lily, McClung, Watahala
	Helderberg Group	8E, 8F, 9D, 10C, 10D, 10E, 17D, 18E, 19E, 20E, 24C, 24D, 34C, 37D	Dekalb, Caneyville, Frederick, Lily, McClung, Watahala
Silurian	Tonoloway Formation Wills Creek Formation McKenzie Formation	8E, 8F, 9D, 10C, 10D, 10E, 17D, 18E, 19E, 20E, 24C, 24D, 34C, 37D	Dekalb, Caneyville, Frederick, Lily, McClung, Watahala
	Keefer sandstone	3C, 15F, 16D, 16E, 19E	Alticrest, Dekalb
	Rose Hill Formation	30C, 30D, 30E, 31F	Berks, Lehew
	Tuscarora Formation (Clinch)	3C, 15F, 16D, 16E, 19E	Alticrest, Dekalb
Ordovician	Juniata Formation	30C, 30D, 30E, 31F	Berks, Lehew
	Martinsburg Formation	4D, 4E, 6F, 23C, 23D, 23E	Berks, Faywood, Poplimento, Weikert
	Edinburg Formation Lincolnshire Formation New Market limestone	8E, 8F, 9D, 10C, 10D, 10E, 24C, 24D	Caneyville, Frederick
	Beekmantown Formation	8E, 8F, 9D, 10C, 10D, 10E, 24C, 24D, 25C, 25D, 51E	Caneyville, Frederick, Watahala

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INDEX TO MAP SHEETS
ALLEGHANY COUNTY, VIRGINIA

MILES

KILOMETERS

SCALE = 1:125000

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

SOIL LEGEND

The map symbols are listed numerically. They consist of a combination of numbers and letters. The numbers represent the kind of soils in the map unit. The capital letters indicate the slope class. Symbols without a slope letter are for miscellaneous areas and for areas of Udorthents that have a wide range in slope.

SYMBOL	NAME
1A	Alonzville loam, 0 to 3 percent slopes, rarely flooded
2A	Alonzville loam, 0 to 3 percent slopes, protected
3C	Alticrest-Dekalb complex, 8 to 15 percent slopes, very stony
4D	Berks channery silt loam, 15 to 35 percent slopes
4E	Berks channery silt loam, 35 to 55 percent slopes
5C	Berks-Weikert complex, 8 to 15 percent slopes
6F	Berks-Weikert complex, 55 to 80 percent slopes
7D	Berks-Weikert complex, 15 to 35 percent slopes, very stony
7E	Berks-Weikert complex, 35 to 55 percent slopes, very stony
8E	Caneyville silt loam, 35 to 55 percent slopes, very rocky
8F	Caneyville silt loam, 55 to 80 percent slopes, very rocky
9D	Caneyville silt loam, karst, 15 to 35 percent slopes, very rocky
10C	Caneyville-Frederick complex, karst, 8 to 15 percent slopes
10D	Caneyville-Frederick complex, karst, 15 to 35 percent slopes
10E	Caneyville-Frederick complex, karst, 35 to 55 percent slopes
11B	Cottonbend silt loam, 3 to 8 percent slopes
11C	Cottonbend silt loam, 8 to 15 percent slopes
12B	Cottonbend-Urban land complex, 3 to 8 percent slopes
12C	Cottonbend-Urban land complex, 8 to 15 percent slopes
13A	Coursey silt loam, 0 to 3 percent slopes, rarely flooded
14B	Coursey-Ogles-Shelocta complex
15F	Dekalb channery sandy loam, 55 to 80 percent slopes, extremely stony
16D	Dekalb-Alticrest complex, 15 to 35 percent slopes, very stony
16E	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony
17D	Dekalb-Lily-McClung complex, 15 to 35 percent slopes
18E	Dekalb-Lily complex, 35 to 55 percent slopes, very stony
19E	Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony
20E	Dekalb-Watahala-McClung complex, 35 to 55 percent slopes
21A	Dunning silt loam, 0 to 3 percent slopes, occasionally flooded
22B	Escatawba loam, 3 to 8 percent slopes, very stony
22C	Escatawba loam, 8 to 15 percent slopes, very stony
22D	Escatawba loam, 15 to 35 percent slopes, very stony
23C	Faywood-Poplimento complex, 8 to 15 percent slopes
23D	Faywood-Poplimento complex, 15 to 35 percent slopes
23E	Faywood-Poplimento complex, 35 to 55 percent slopes
24C	Frederick silt loam, 8 to 15 percent slopes
24D	Frederick silt loam, 15 to 25 percent slopes
25C	Frederick-Watahala complex, 8 to 15 percent slopes
25D	Frederick-Watahala complex, 15 to 35 percent slopes
26C	Gilpin silt loam, 8 to 15 percent slopes
26D	Gilpin silt loam, 15 to 25 percent slopes
27A	Gladehill loam, 0 to 3 percent slopes, occasionally flooded
28A	Gladehill loam, 0 to 3 percent slopes, protected
29	Landfills
30C	Lehew-Berks complex, 8 to 15 percent slopes, very stony
30D	Lehew-Berks complex, 15 to 35 percent slopes, very stony
30E	Lehew-Berks complex, 35 to 55 percent slopes, very stony
31F	Lehew-Berks-Rock outcrop complex, 55 to 80 percent slopes, extremely stony
32C	Lily sandy loam, 8 to 15 percent slopes
33D	Lily sandy loam, 15 to 35 percent slopes, very stony
34C	Lily-McClung-Dekalb complex, 8 to 15 percent slopes
35C	Macove channery silt loam, 3 to 15 percent slopes, very stony
36A	Massanetta silt loam, 0 to 3 percent slopes, occasionally flooded
37D	McClung-Watahala-Dekalb complex, 15 to 35 percent slopes
38B	Murrill loam, 3 to 8 percent slopes
38C	Murrill loam, 8 to 15 percent slopes
38D	Murrill loam, 15 to 25 percent slopes
39C	Murrill cobbly loam, 8 to 15 percent slopes, very stony
39D	Murrill cobbly loam, 15 to 35 percent slopes, very stony
40B	Nicelytown silt loam, 3 to 8 percent slopes
40C	Nicelytown silt loam, 8 to 15 percent slopes
41A	Ogles very cobbly loam, 0 to 3 percent slopes, occasionally flooded
42B	Oriskany cobbly sandy loam, 3 to 8 percent slopes, very stony
43C	Oriskany cobbly sandy loam, 8 to 15 percent slopes, extremely stony
43D	Oriskany cobbly sandy loam, 15 to 35 percent slopes, extremely stony
43E	Oriskany cobbly sandy loam, 35 to 55 percent slopes, extremely stony
44E	Oriskany extremely bouldery sandy loam, 25 to 55 percent slopes, very rubbly
45C	Oriskany-Murrill complex, 8 to 15 percent slopes, very stony
45D	Oriskany-Murrill complex, 15 to 35 percent slopes, very stony
45E	Oriskany-Murrill complex, 35 to 55 percent slopes, extremely stony
46A	Purdy silty clay loam, 0 to 3 percent slopes
47C	Shelocta-Berks complex, 8 to 15 percent slopes
47D	Shelocta-Berks complex, 15 to 35 percent slopes
47E	Shelocta-Berks complex, 35 to 55 percent slopes
48B	Sugarhol silt loam, 3 to 8 percent slopes
48C	Sugarhol silt loam, 8 to 15 percent slopes
49	Udorthents, smoothed-Rock outcrop complex, 1 to 65 percent slopes
50	Urban land-Udorthents, smoothed complex, 3 to 15 percent slopes
51E	Watahala-Frederick complex, 35 to 55 percent slopes, very rocky
52D	Weikert-Berks-Rough complex, 15 to 35 percent slopes
52E	Weikert-Berks-Rough complex, 35 to 55 percent slopes
52F	Weikert-Berks-Rough complex, 55 to 80 percent slopes, very stony
53F	Weikert-Rough complex, 55 to 80 percent slopes
54F	Weikert-Rock outcrop-Rough complex
55C	Wharton-Blairton complex, 8 to 15 percent slopes
55D	Wharton-Blairton complex, 15 to 35 percent slopes
56A	Wolfgap loam, 0 to 3 percent slopes, occasionally flooded
57A	Wolfgap loam, 0 to 3 percent slopes, protected
58B	Zoar silt loam, 3 to 8 percent slopes
59B	Zoar-Urban land complex, 3 to 8 percent slopes
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

National, state, or province

County or parish

Reservation (national forest or park, state forest or park)

Limit of soil survey (label) and/or denied access area

Field sheet matchline & neatline

TRANSPORTATION

Divided roads

Other roads

ROAD EMBLEM & DESIGNATIONS

Federal 287

State 52

HYDROGRAPHIC FEATURES

STREAMS

Perennial, double line

Unclassified stream

Drainage end (Indicates direction of flow)

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS 5B 11B

LANDFORM FEATURES

Non-bedrock escarpment

EXCAVATIONS

PITS

Borrow pits

MISCELLANEOUS SURFACE FEATURES

Clay spot

Gravelly spot

Marsh or swamp

Sandy spot

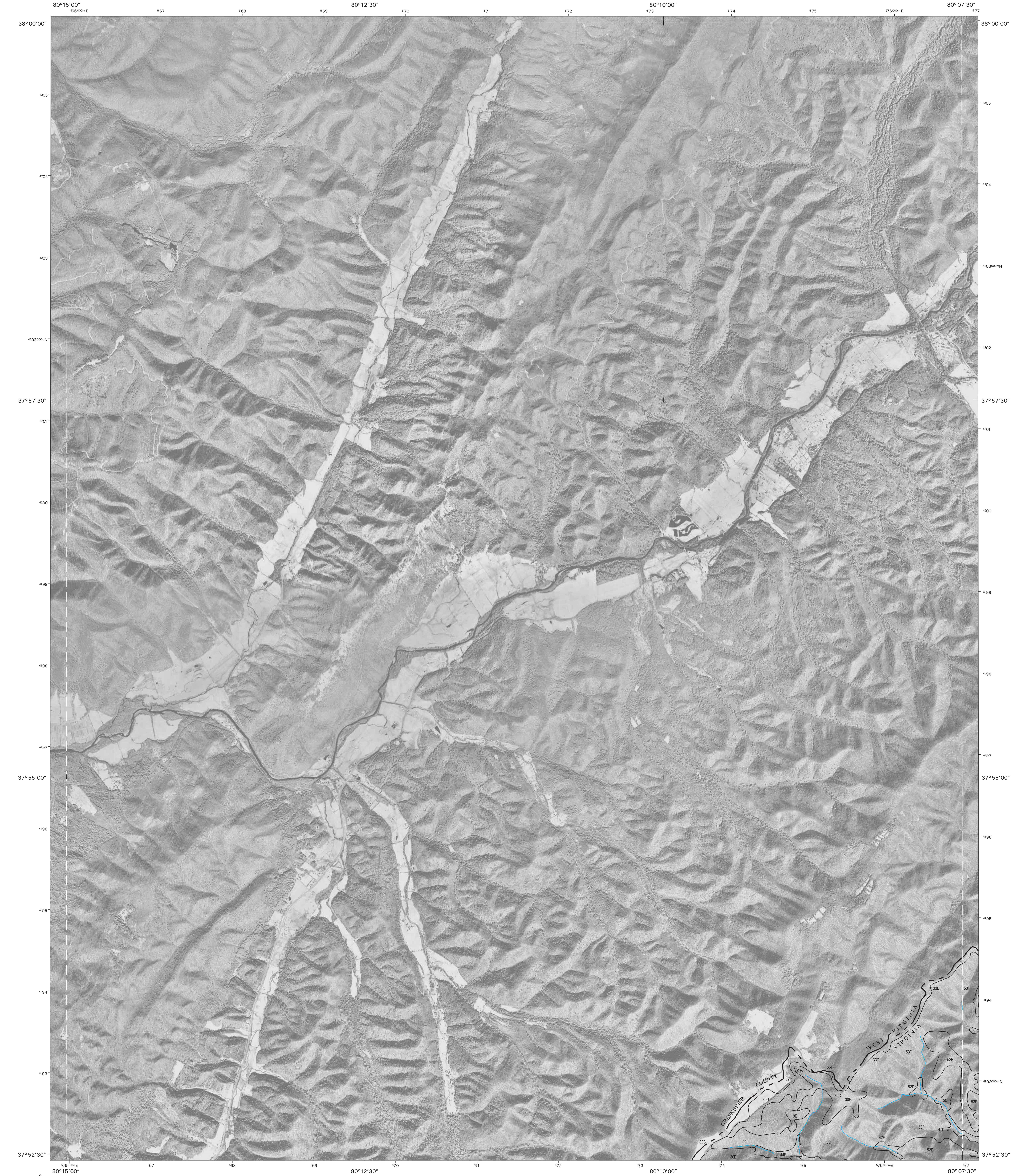
Severely eroded spot

Spoil area - Udorthents

Wet spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
ALVON QUADRANGLE
SHEET NUMBER 1 OF 19



Joins sheet 6, White Sulphur Springs

Joins sheet 8, Callaghan

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

	■	2
6	7	8

2 RUCKER GAP
6 WHITE SULPHUR SPRINGS
7 JERRYS RUN
8 CALLAGHAN

INDEX TO ADJOINING 7.5 MAPS

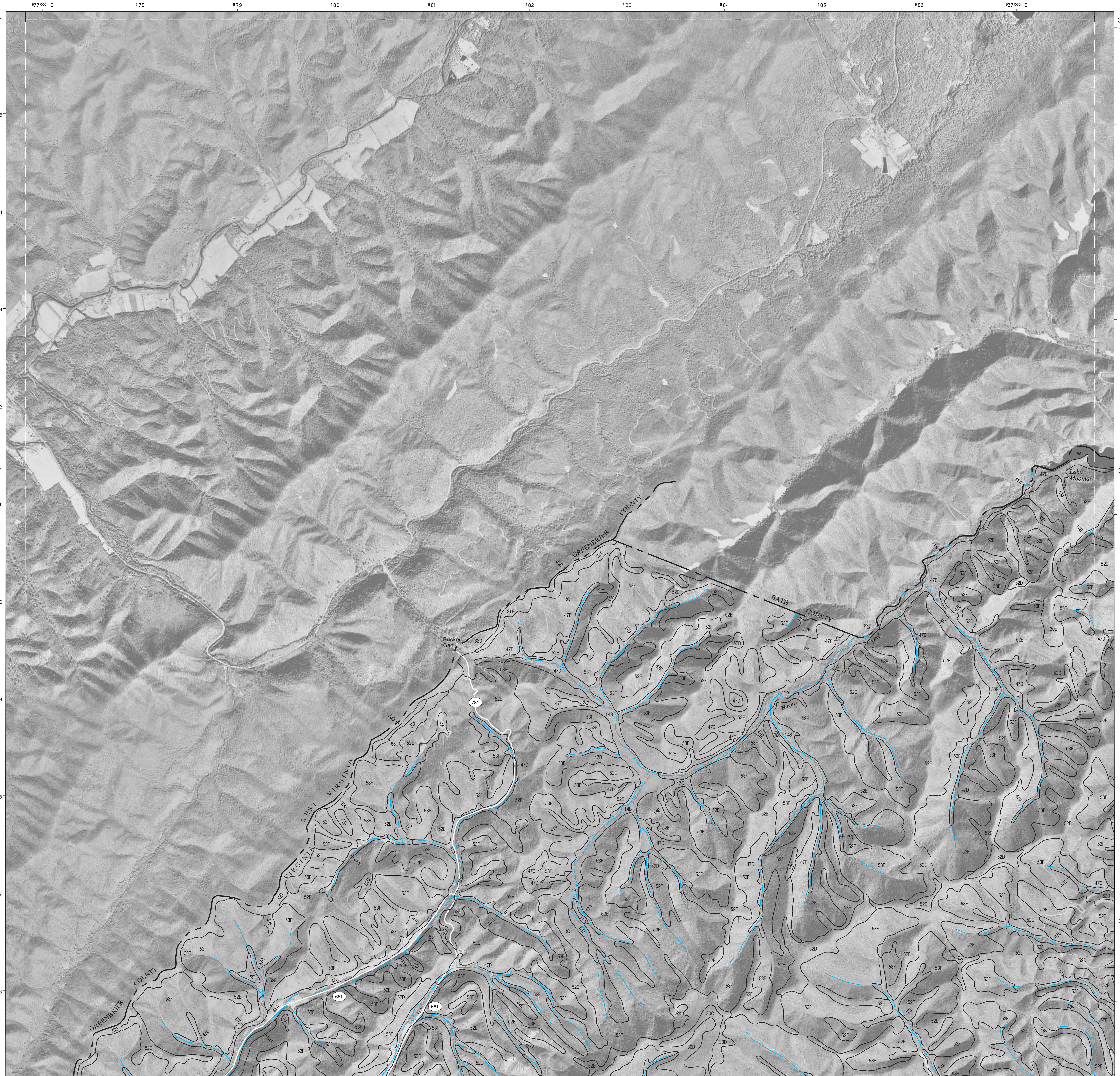
ALVON, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 1 OF 19

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
RUCKER GAP QUADRANGLE
SHEET NUMBER 2 OF 19



Joins sheet 7, Jerrys Run

Joins sheet 9, Covington

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1		3
7	8	9

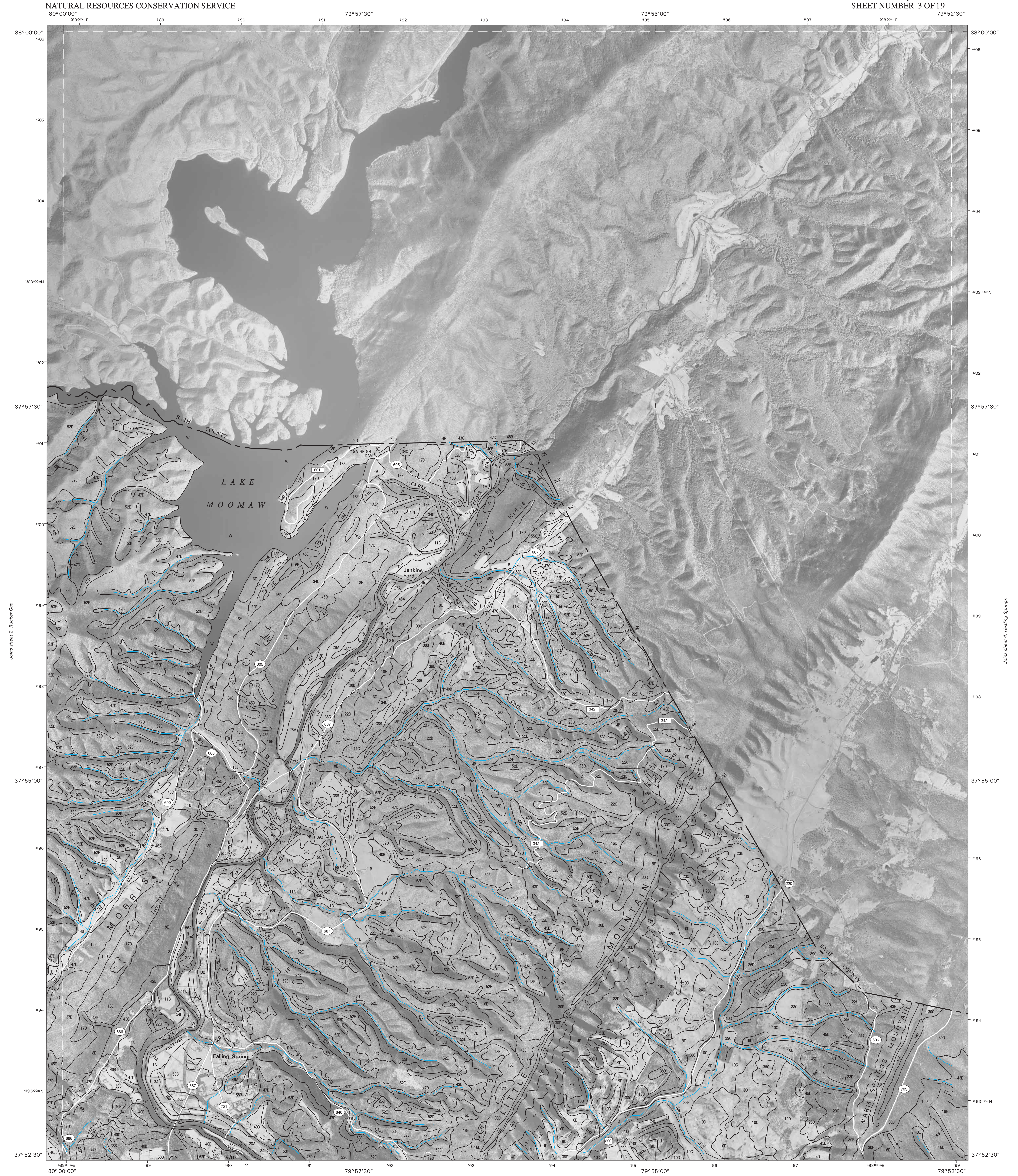
1 ALVON
3 FALLING SPRING
7 JERRYS RUN
8 CALLAGHAN
9 COVINGTON

INDEX TO ADJOINING 7.5 MAPS

RUCKER GAP, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 2 OF 19

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



Joins sheet 8, Callaghan

Joins sheet 10, Clifton Forge

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

2		4
8	9	10

2 RUCKER GAP
4 HEALING SPRINGS
8 CALLAGHAN
9 COVINGTON
10 CLIFTON FORGE

INDEX TO ADJOINING 7.5 MAPS

FALLING SPRING, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 3 OF 19

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
HEALING SPRINGS QUADRANGLE
SHEET NUMBER 4 OF 19

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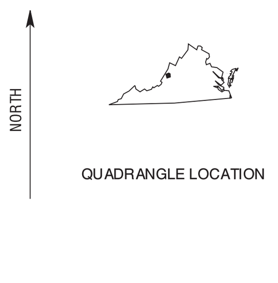
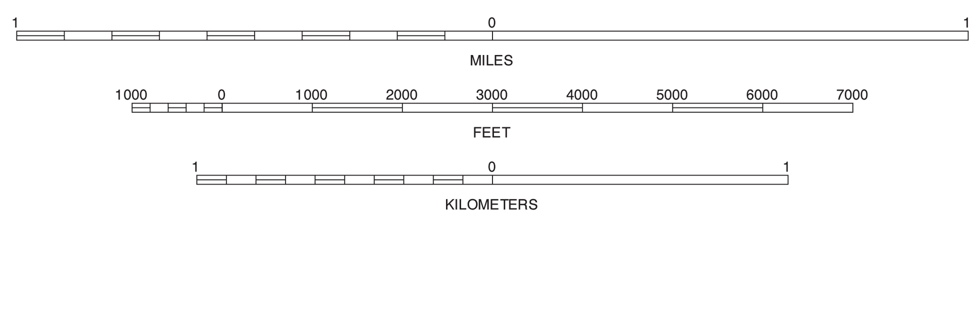
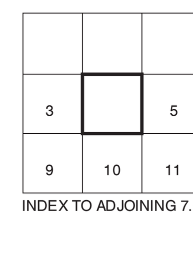
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000





INDEX TO ADJOINING 7.5 MAPS

HEALING SPRINGS, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 4 OF 19

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
NIMROD HALL QUADRANGLE
SHEET NUMBER 5 OF 19

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

4		
10	11	12

4 HEALING SPRINGS
10 CLIFTON FORGE
11 LONGDALE FURNACE
12 COLLIERSTOWN

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NIMROD HALL, VIRGINIA
7.5 MINUTE SERIES
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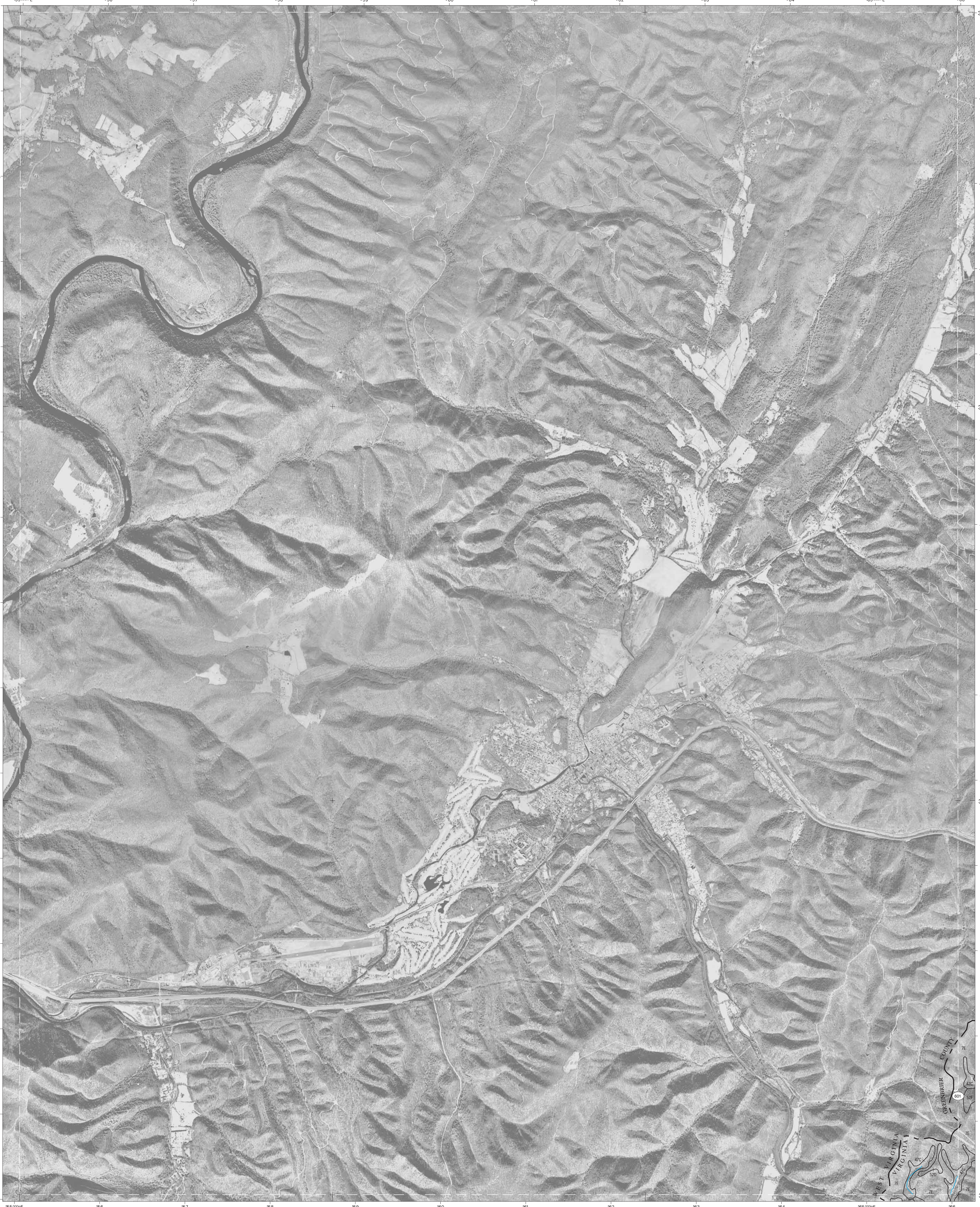
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
WHITE SULPHUR SPRINGS QUADRANGLE
SHEET NUMBER 6 OF 19



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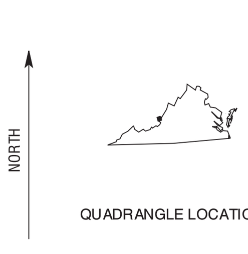
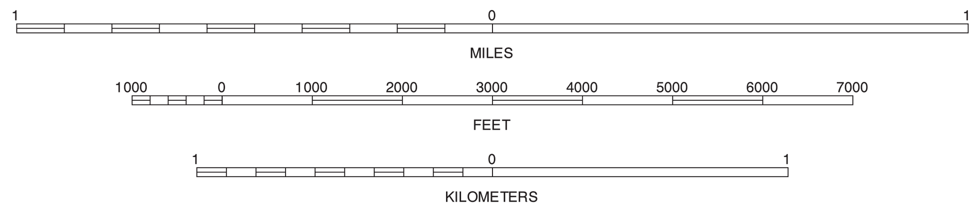
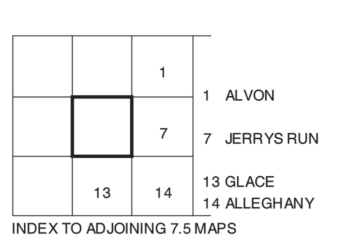


QUADRANGLE LOCATION

SCALE 1:24000





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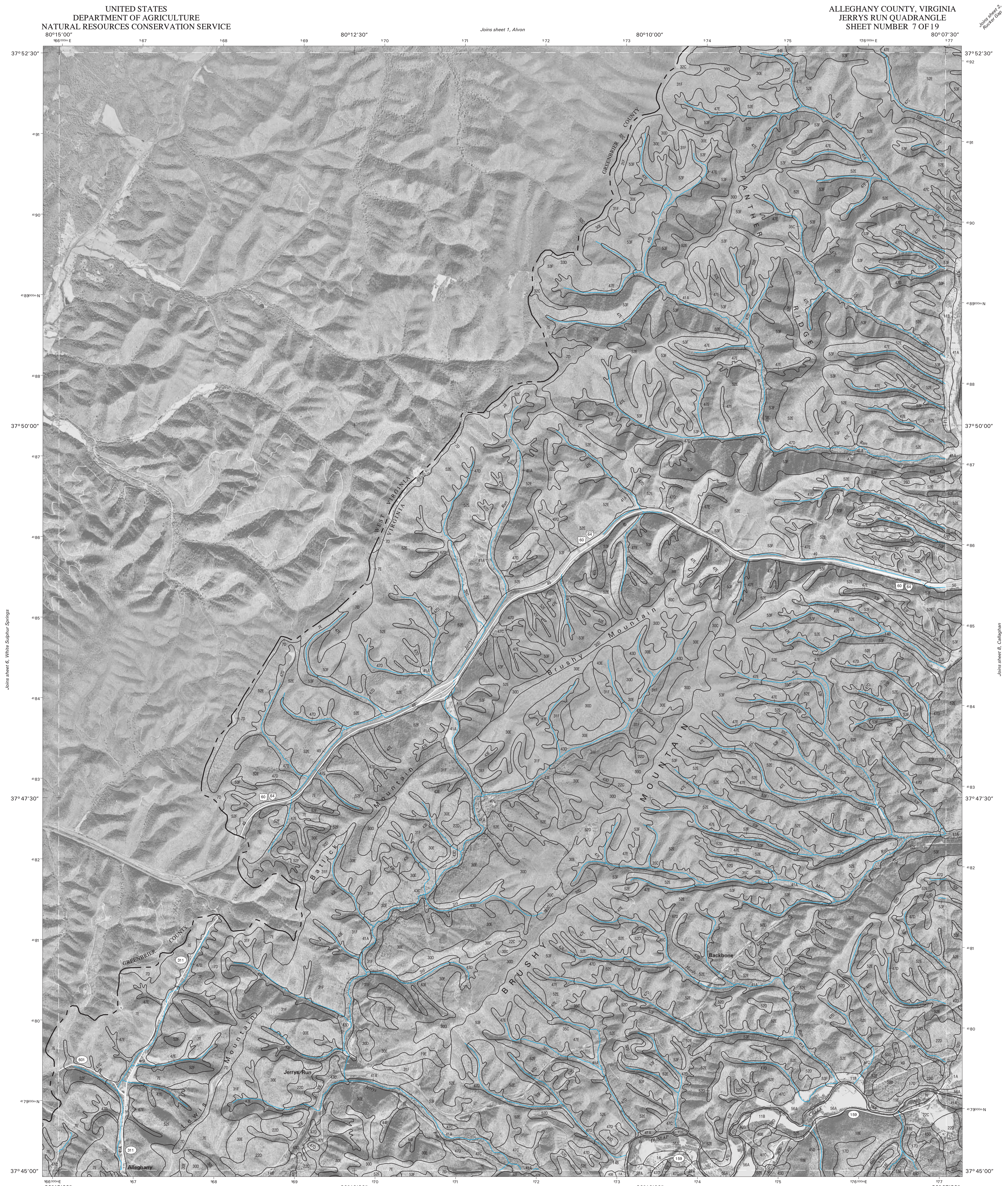
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
JERRYS RUN QUADRANGLE
SHEET NUMBER 7 OF 19



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

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1 ALVON
2 RUCKER GAP
6 WHITE SULPHUR SPRINGS
8 CALLAGHAN
13 GLACE
14 ALLEGHANY
15 JORDAN MINES

JERRYS RUN, VIRGINIA
7.5 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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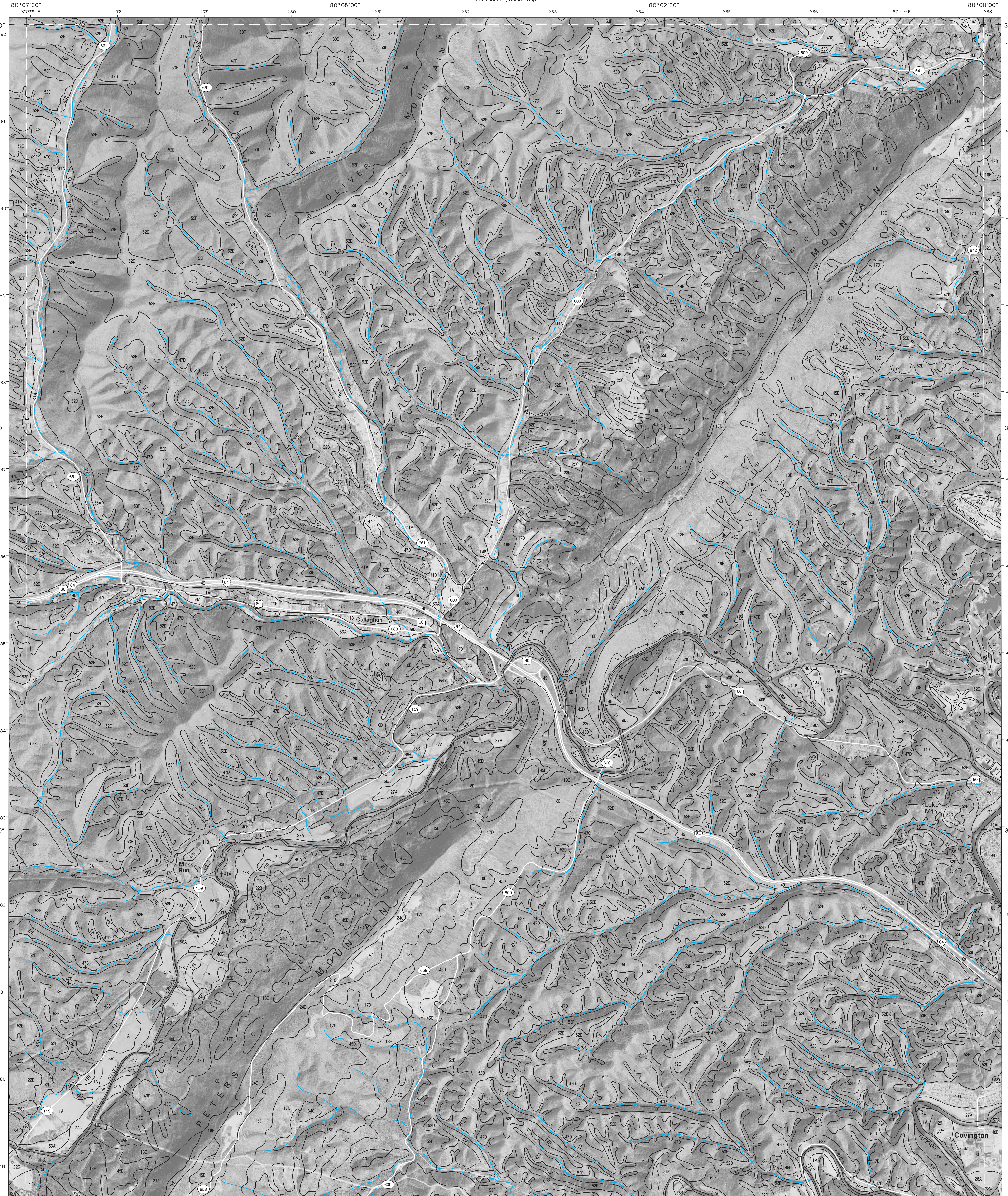
ALLEGHANY COUNTY, VIRGINIA
CALLAGHAN QUADRANGLE
SHEET NUMBER 8 OF 19



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1	2	3
7		9
14	15	16

1 ALVON
2 RUCKER GAP
3 FALLING SPRING
7 JERRYS RUN
9 COVINGTON
14 ALLEGHANY
15 JORDAN MINES
16 STROM

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CALLAGHAN, VIRGINIA
7.5 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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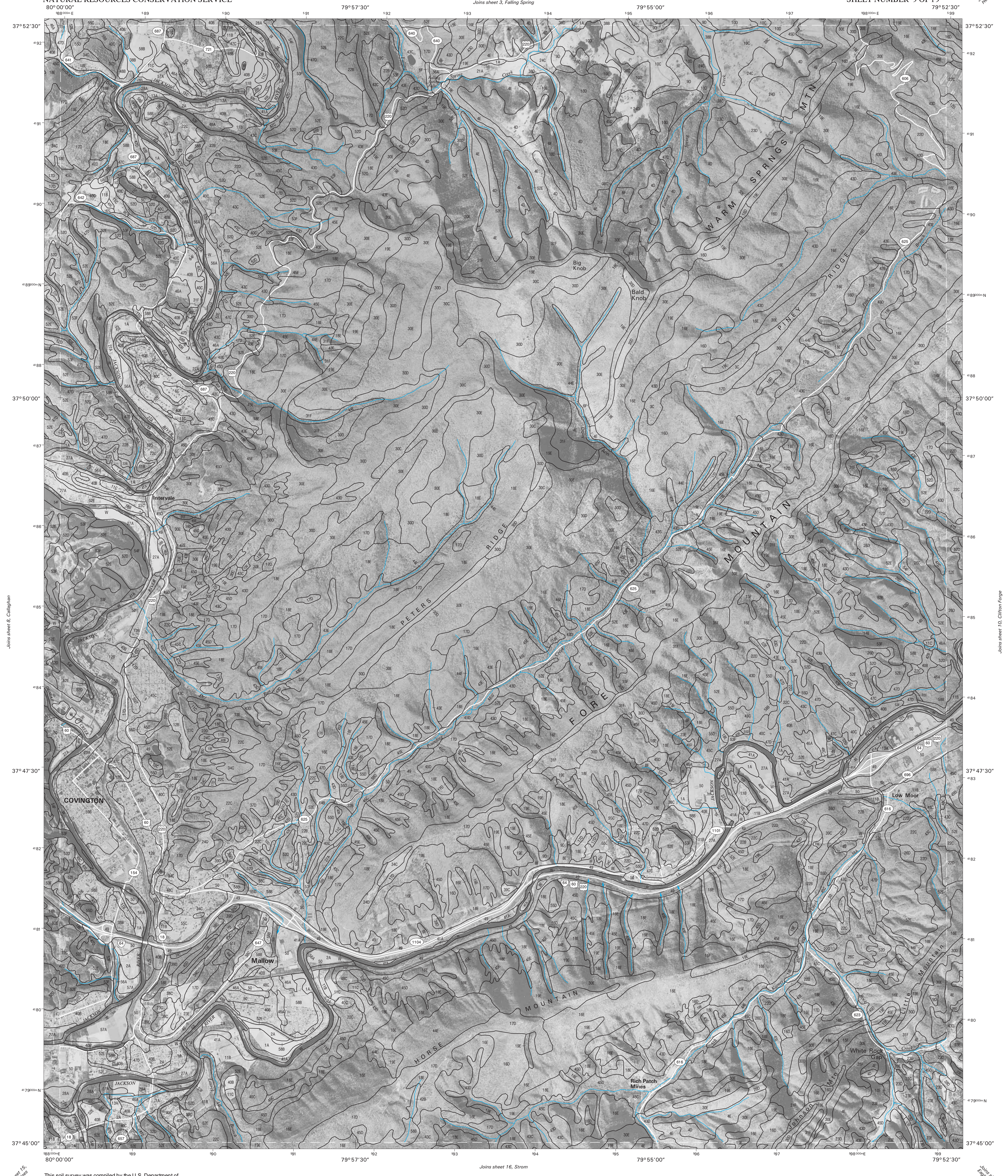
ALLEGHANY COUNTY, VIRGINIA
COVINGTON QUADRANGLE
SHEET NUMBER 9 OF 19



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS 1 0 1

2	3	4
8		10
15	16	17

2 RUCKER GAP
3 FALLING SPRING
4 HEALING SPRINGS
8 CALLAGHAN
10 CLIFTON FORGE
15 JORDAN MINES
16 STROM
17 EAGLE ROCK

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COVINGTON, VIRGINIA
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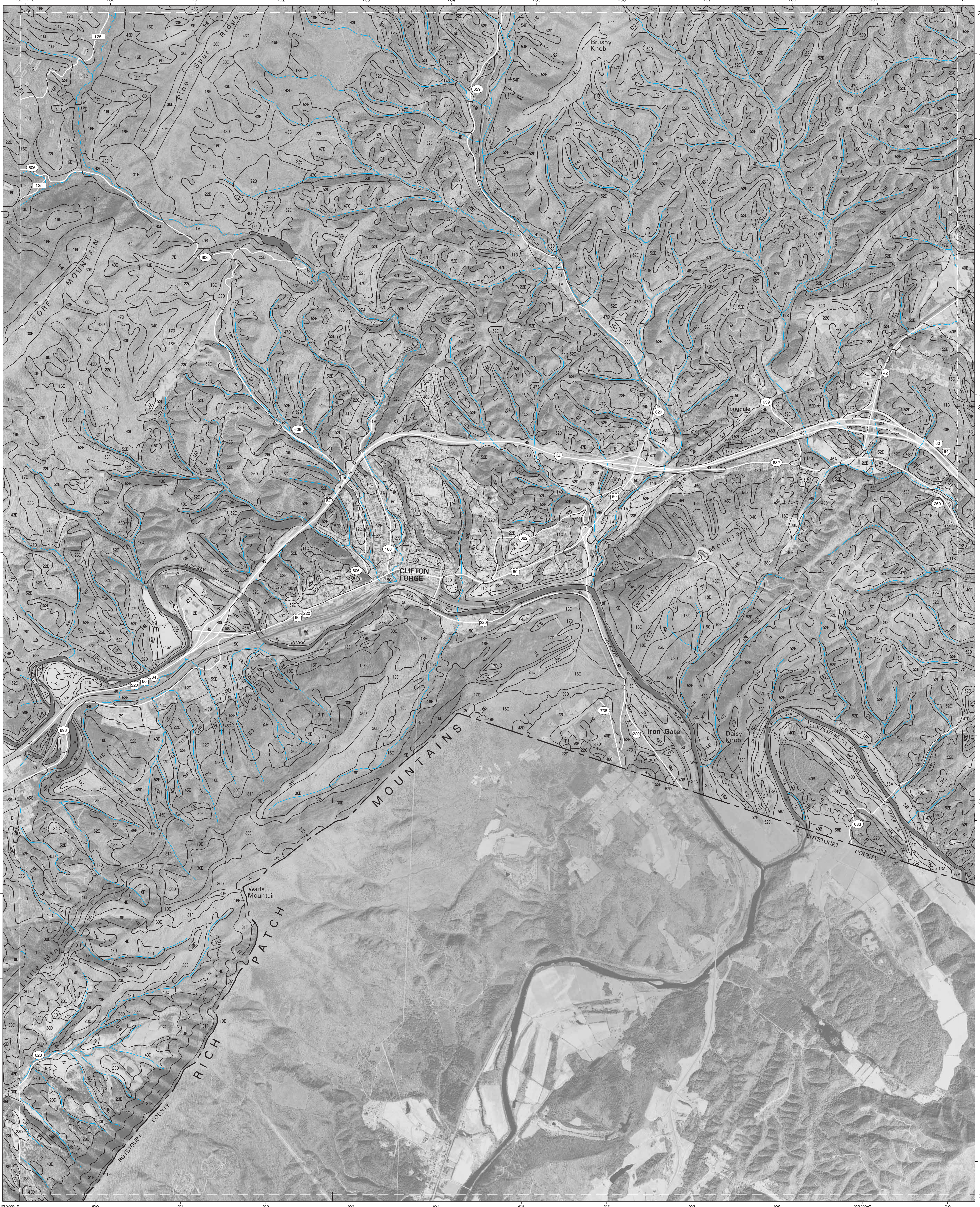
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
CLIFTON FORGE QUADRANGLE
SHEET NUMBER 10 OF 19



Joins sheet 17, Eagle Rock

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

3	4	5
9		11
16	17	

3 FALLING SPRING
4 HEALING SPRINGS
5 NIMROD HALL
9 COVINGTON
11 LONGDALE FURNACE
16 STROM
17 EAGLE ROCK

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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ALLEGHANY COUNTY, VIRGINIA
LONGDALE FURNACE QUADRANGLE
SHEET NUMBER 11 OF 19

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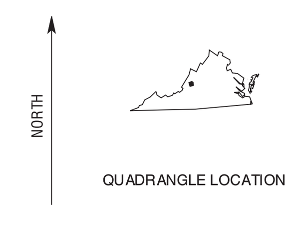

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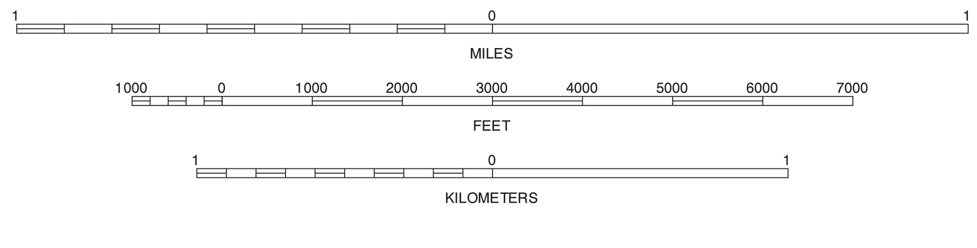

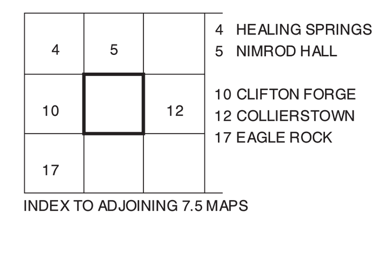

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LONGDALE FURNACE, VIRGINIA
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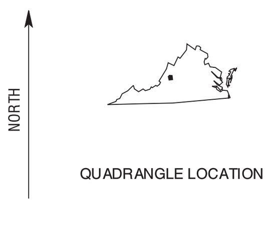

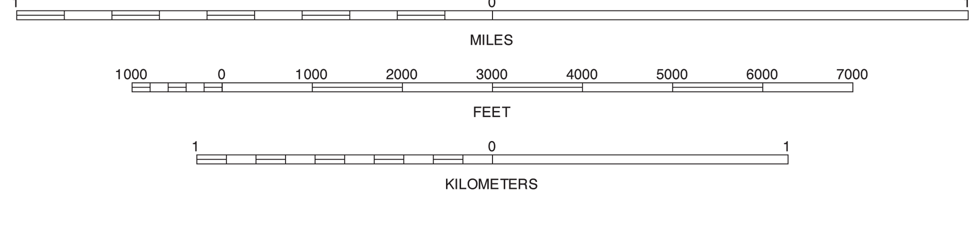

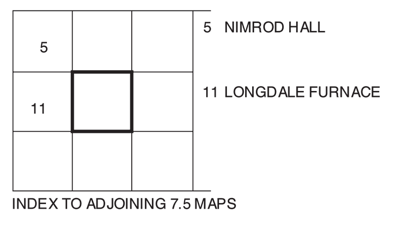

COLLIERSTOWN, VIRGINIA

7.5 MINUTE SERIES
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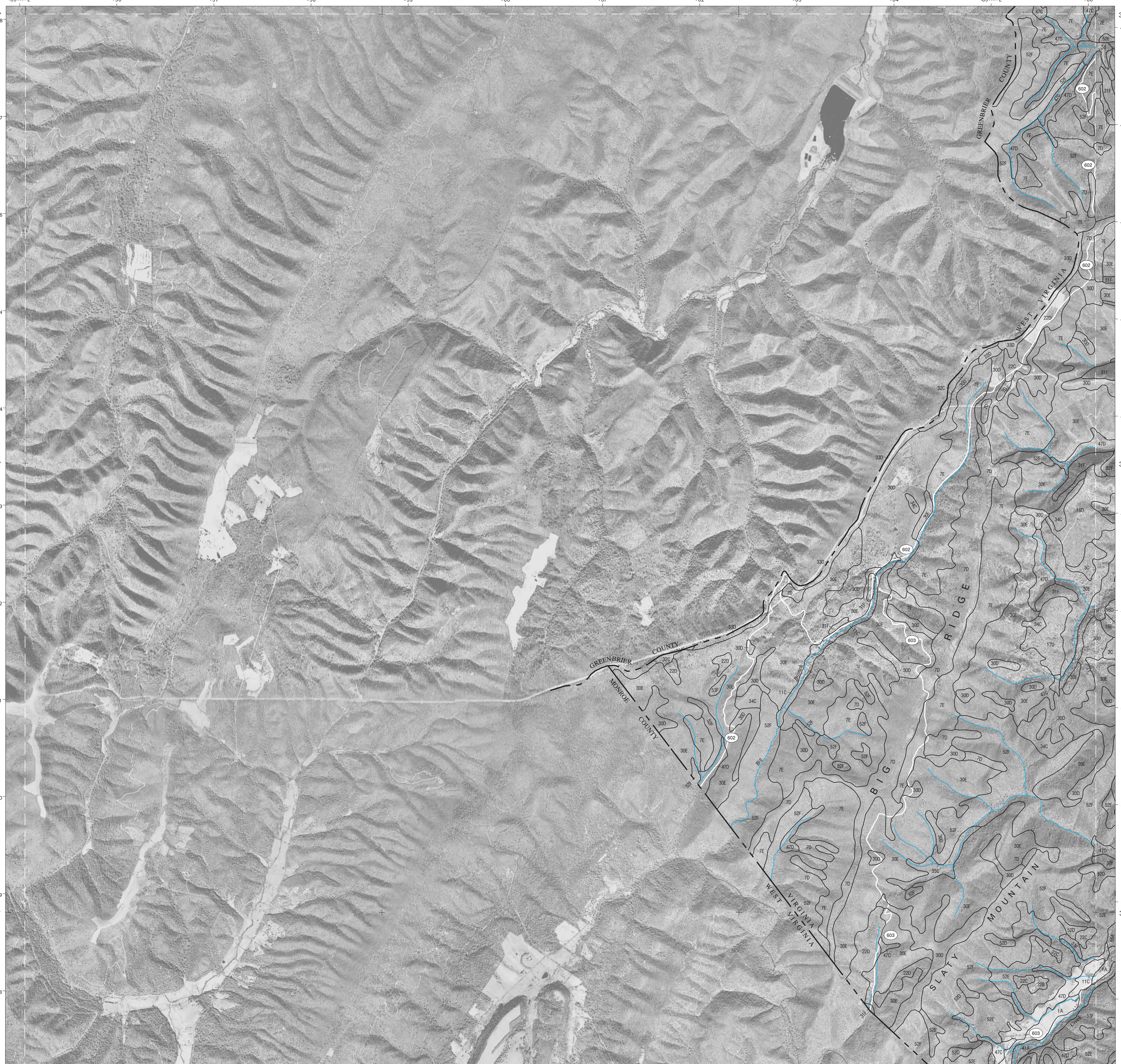
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
GLACE QUADRANGLE
SHEET NUMBER 13 OF 19

Joins sheet 6, White Sulphur Springs

Joins sheet 7, Jerrys Run



Joins sheet 14, Alleghany

Joins sheet 18, Potts Creek

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

	6	7
	■	14
		18

6 WHITE SULPHUR SPRINGS
7 JERRYS RUN
14 ALLEGHANY
18 POTTS CREEK

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GLACE, VIRGINIA

7.5 MINUTE SERIES
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UNITED STATES
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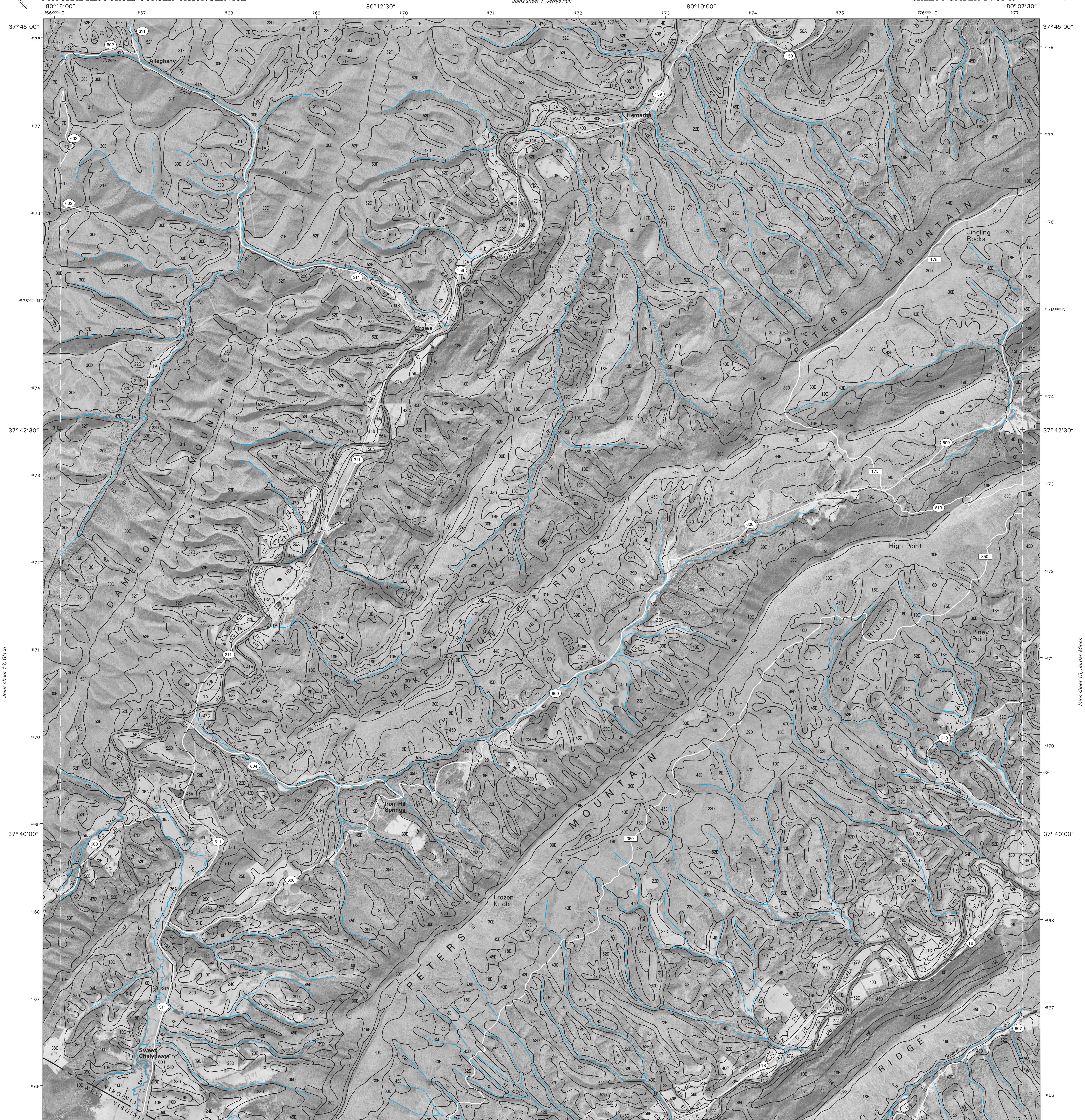
ALLEGHANY COUNTY, VIRGINIA
ALLEGHANY QUADRANGLE
SHEET NUMBER 14 OF 19

Joins sheet 6, White Sulphur Springs
Joins sheet 7, Jerrys Run
Joins sheet 8, Callaghan



Joins sheet 13, Glace
Joins sheet 15, Jordan Mines
Joins sheet 18, Potts Creek
Joins sheet 19, New Castle

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

6	7	8	6 WHITE SULPHUR SPRINGS 7 JERRYS RUN 8 CALLAGHAN
13		15	13 GLACE 15 JORDAN MINES
	18	19	18 POTTS CREEK 19 NEW CASTLE

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ALLEGHANY, VIRGINIA
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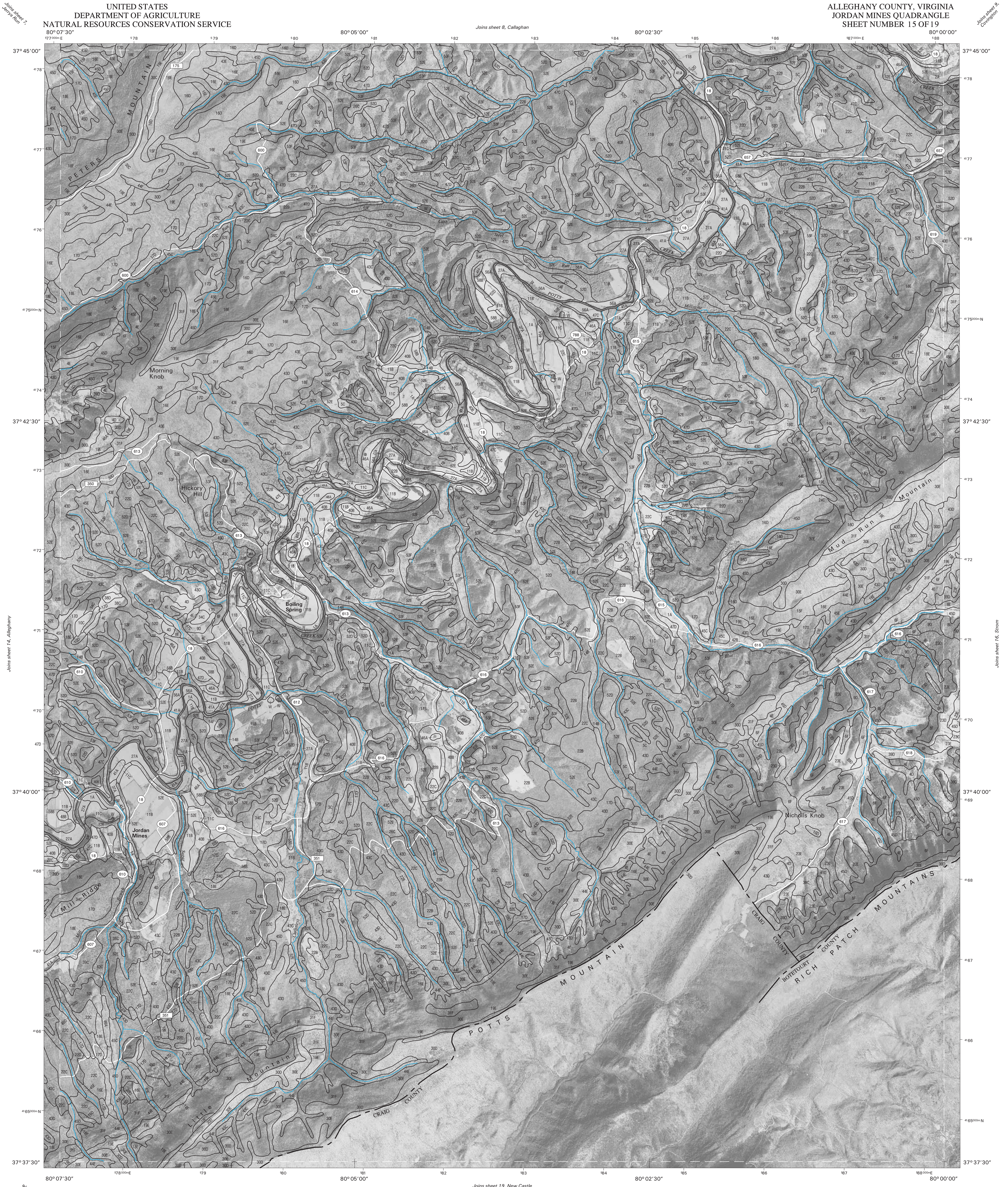
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ALLEGHANY COUNTY, VIRGINIA
JORDAN MINES QUADRANGLE
SHEET NUMBER 15 OF 19



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

7	8	9
14		16
18	19	

7 JERRYS RUN
8 CALLAGHAN
9 COVINGTON
14 ALLEGHANY
16 STROM
18 POTTS CREEK
19 NEW CASTLE

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JORDAN MINES, VIRGINIA

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UNITED STATES
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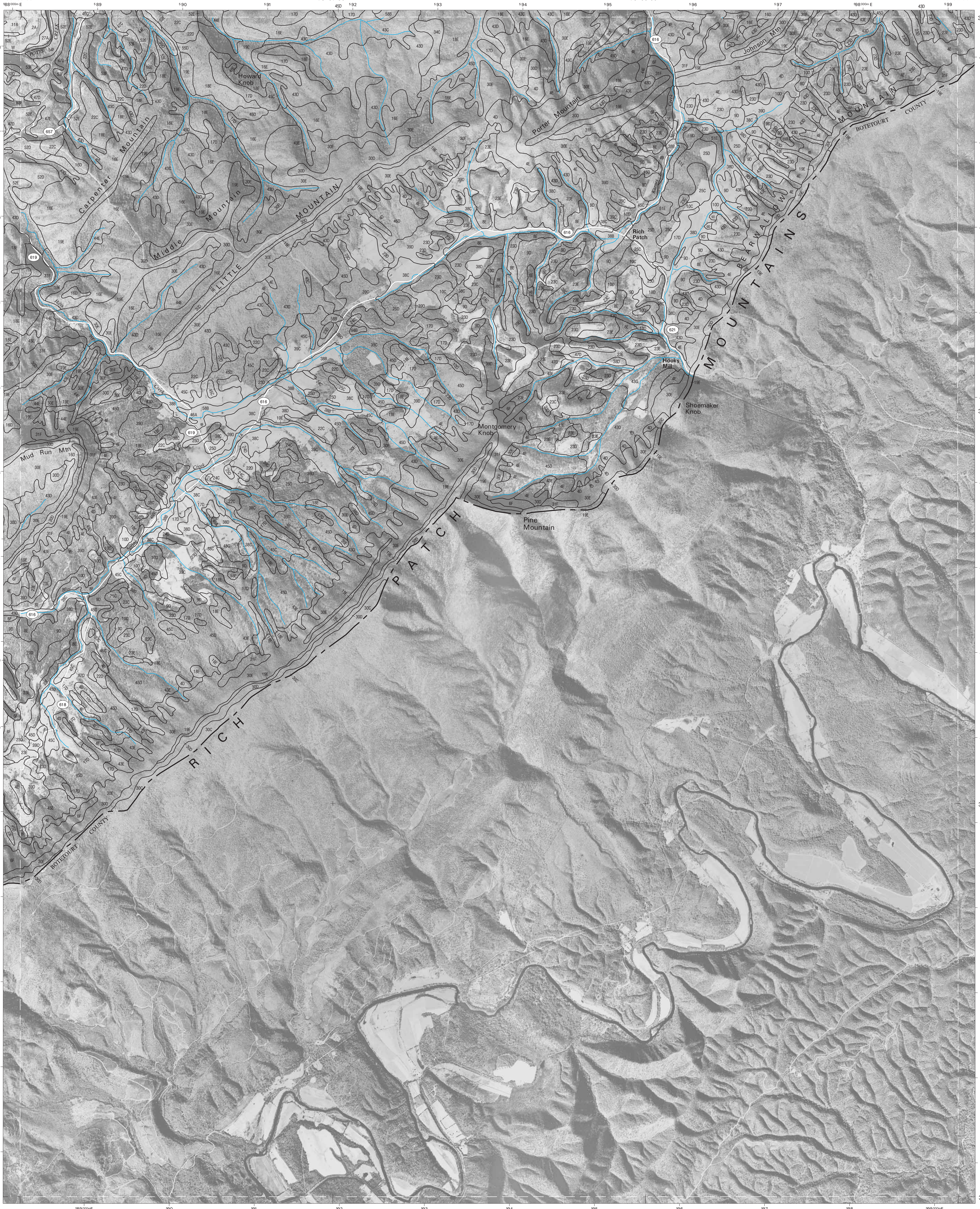
ALLEGHANY COUNTY, VIRGINIA
STROM QUADRANGLE
SHEET NUMBER 16 OF 19

Joins sheet 8, Callaghan

Joins sheet 9, Covington

Joins sheet 10, Clifton Forge



Joins sheet 15, Jordan Mines

Joins sheet 17, Eagle Rock

Joins sheet 19, New Castle

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

8	9	10
15		17
19		

8 CALLAGHAN
9 COVINGTON
10 CLIFTON FORGE
15 JORDAN MINES
17 EAGLE ROCK
19 NEW CASTLE

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ALLEGHANY COUNTY, VIRGINIA
EAGLE ROCK QUADRANGLE
SHEET NUMBER 17 OF 19

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

9	10	11
16		

9 COVINGTON
10 CLIFTON FORGE
11 LONGDALE FURNACE
16 STROM

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EAGLE ROCK, VIRGINIA
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DEPARTMENT OF AGRICULTURE
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ALLEGHANY COUNTY, VIRGINIA
POTTS CREEK QUADRANGLE
SHEET NUMBER 18 OF 19

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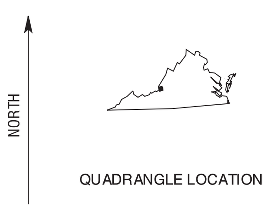

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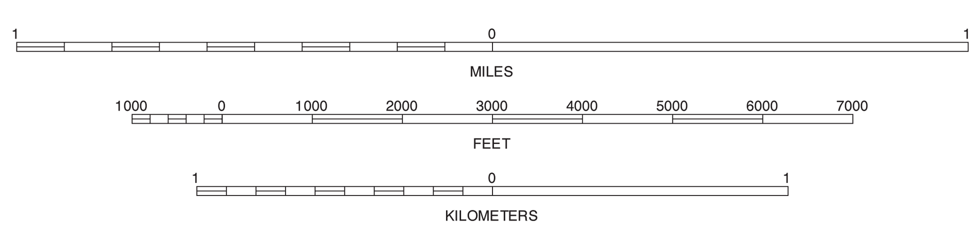

13	14	15
		19

13 GLACE
14 ALLEGHANY
15 JORDAN MINES
19 NEW CASTLE

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POTTS CREEK, VIRGINIA

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

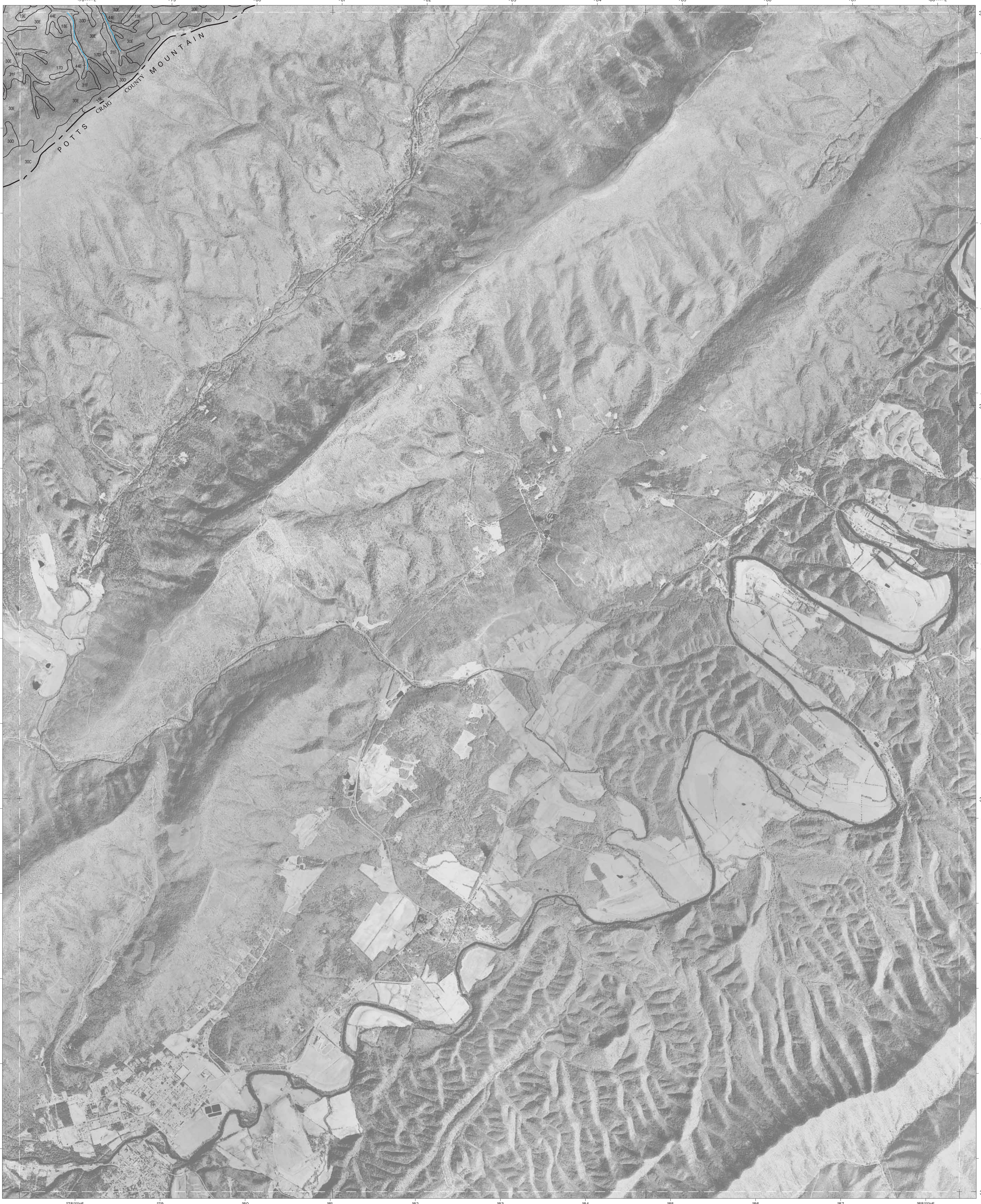
ALLEGHANY COUNTY, VIRGINIA
NEW CASTLE QUADRANGLE
SHEET NUMBER 19 OF 19

Joins sheet 14, Alleghany

Joins sheet 15, Jordan Mines

Joins sheet 16, Strom

Joins sheet 18, Potts Creek



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

14	15	16
18		

14 ALLEGHANY
15 JORDAN MINES
16 STROM
18 POTTS CREEK

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NEW CASTLE, VIRGINIA
7.5 MINUTE SERIES
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